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## **Design Standards and Guidelines for the Historic Kōkeʻe, Halemanu and Puʻu ka Pele Camp Lots**

**(Kōkeʻe and Waimea Canyon Recreation Residence Historic District)**



Insert historic photo.



**State of Hawaiʻi, Division of State Parks  
September 2006 (Revised July 2008)**

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**(Kōkeʻe and Waimea Canyon Recreation Residence Historic District)**

**Prepared for the  
State of Hawaiʻi, Division of State Parks**

**Under Purchase Order Number  
C25890**

**By Mason Architects, Inc.  
with  
Dawn E. Duensing, M.A.**

**September 2006 (Revised July 2008)**

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The architectural design standards and guidelines (Design Guidelines) presented in this document were developed to enhance and maintain the historic character and integrity of the Kōke'e and Waimea Canyon State Parks Recreation Residence Historic District, Island of Kaua'i.<sup>1</sup> It intends to accomplish this goal by providing the Division of State Parks (State Parks), Department of Land and Natural Resources (DLNR), and those individuals or organizations leasing camp lots (Lessees) in Kōke'e and Waimea Canyon State Parks with the information and design principles needed to make sound decisions on how to repair, maintain, preserve, and rehabilitate the recreation residences, camp facilities, and landscaped lots located in these parks. They also provide a basis for guiding the design of new construction, including additions to existing facilities, so that any new construction will not diminish the overall historic character of the parks. To ensure the appropriate application of these Design Guidelines, this document also sets out a review process through which State Parks and the State Historic Preservation Division (SHPD) will determine whether individual projects proposed by Lessees conform to the Design Guidelines.

State Parks committed to developing and implementing these Design Guidelines to fulfill, in part, its responsibilities under the State of Hawai'i's historic preservation review process mandated by §6E-8, Hawaii Revised Statutes (HRS) and Chapter 13-275, Hawaii Administrative Rules (HAR). This process requires an agency to give SHPD an opportunity to review any agency project that may affect historic properties. In this case, it was determined that issuing new leases for the historic recreation residences and camp lots could affect significant historic properties and that measures to mitigate these potential effects were warranted. These Design Guidelines and the individual project review process they establish constitute "the detailed mitigation plan" called for in §13-275-8(h), HAR. They provide both detailed guidance and a process by which this detailed guidance can be applied to individual projects proposed by Lessees.

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<sup>1</sup> Note: State Parks staff revised portions of Chapters 1 and 2 of this Draft (July 2008). The original authors have not yet had a chance to consider or revise these proposed changes. Further revisions are also likely pending public comment.

State Parks also committed through the §6E-8, HRS compliance process to make adherence to these Design Guidelines and to a design review process a condition of any new lease agreement for recreation residences or camp lots. By doing so, State Parks hopes to establish a mutual understanding with all of its Lessees that the principles and values of historic preservation will be given high priority when decisions are made to repair or rehabilitate historic structures or to construct new structures within Kōke'e and Waimea Canyon State Parks.

Beyond regulatory requirements and lease conditions, State Parks hopes this document will encourage the long-time preservation and rehabilitation of historic structures and their settings simply by providing, in one document, useful information on how to treat historic building materials and structures when routine or periodic maintenance work is being performed. This document is also designed to raise awareness of basic preservation principles and approaches, and to relate such principles to the types of buildings and materials in the parks. This guidance is not intended, however, to replace professional judgment when major rehabilitation projects and new construction are being planned.

### ***KŌKE'E AND WAIMEA CANYON STATE PARKS RECREATION RESIDENCE HISTORIC DISTRICT***

It is also through the §6E-8, HRS, compliance process that the three complexes of historic camp lots, called Kōke'e, Halemanu and Pu'u ka Pele Camp Lots, were determined to be significant as a discontinuous historic district (see figure on page 3). As such it was entered into the "Hawai'i inventory of historic places" [§13-275-6(d)(3)] as the "Kōke'e and Waimea Canyon State Parks Recreation Residence Historic District" (Historic District). The Historic District exhibits a legacy of unique architecture and is officially recognized as an integral and irreplaceable part of the cultural and historical heritage of Kaua'i and the State of Hawai'i. These camp lots and their historic structures still convey those cultural and aesthetic values that have made them a coveted recreational retreat and a respite from hot summers for over 70 years.

Over this 70-year period, at least 146 individual lots have been designated for camping and recreational purposes within the three major camp lot complexes. Of these lots, 104 have existing recreation residences, six have group camp facilities, and one has served as a ranger station. Of the 113 lots with standing structures, 71 lots have structures that are historic (i.e., over 50 years old) and have been evaluated as significant because they contribute to the overall significance of the Historic District. The recreation residences and camp facilities on the remaining 42 lots are either non-historic (i.e., less than 50 years old) or are no longer considered contributing structures because their historic integrity has been compromised by inappropriate changes.

Recognizing these camp lots as a Historic District provides a framework to manage and protect the area as a unified whole and as a cultural landscape, including the publicly visible aspects of its historic buildings and their setting.

### **AREA SUBJECT TO DESIGN GUIDELINES**

These Design Guidelines, including the design review process, will apply to all camp lots, recreation residences, and camp facilities leased by State Parks that are located within the boundaries of the Kōke'e and Waimea Canyon Recreation Residence Historic District at Kōke'e and Waimea Canyon State Parks, Kaua'i. This includes all individual, leased parcels within Tax Map Key plats 02, 03, and 04 (TMK: (2) I-4-02, 03, 04: various parcels). While the text of the Design Guidelines tends to focus on the Lessees, all state agencies, including those within DLNR, will also be expected to follow these standards and guidelines. Where applicable, the basic preservation concepts embodied by the Design Guideline will also be applied to any projects proposed along access corridors or non-leased land within the Historic District boundaries.

### **HOW TO USE THE DESIGN GUIDELINES**

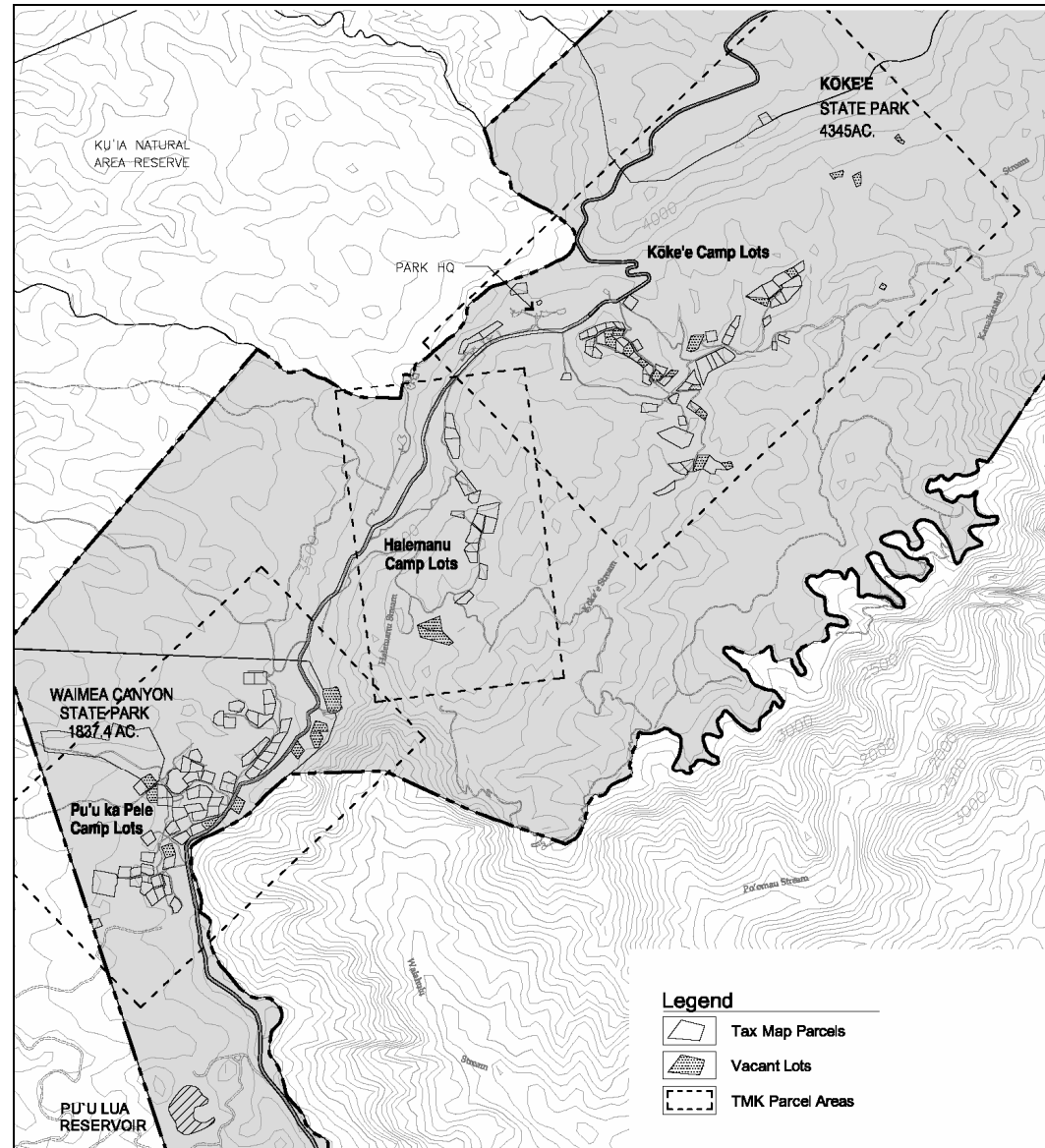
This document is to be used as a primary resource for Lessees who are planning improvement projects ranging from relatively simple repairs or routine maintenance tasks to the construction of new

recreation residences on vacant lots. A Lessee contemplating a project should first consult Chapter 2 (Review Process) to determine if the anticipated project requires official design review. Staff of State Parks and SHPD should be consulted if there is any ambiguity over the need for official review. Chapter 2 also outlines the steps needed to complete the review process and identifies the kinds of supporting documents needed to evaluate a proposed project. A list of other state and county permits or approvals that may apply to projects is also included to encourage early coordination of all compliance needs. Any architect or contractor preparing plans or project descriptions should be given a copy of the Design Guidelines to ensure that the guidelines are applied early in the design phase of the project. In many cases, professional architects and contractors are the ones who will be instrumental in implementing the guidelines.

Chapter 3 (History and Character) presents the historical and architectural foundation for the Design Guidelines. Those who will use their professional judgment, either to design a project or to assess a project's adherence to the Design Guidelines during the review process, will rely on this chapter to understand those sets of architectural and landscape styles, features, materials, and construction methods that uniquely and collectively convey the historic character of the three camp lot complexes. This general and specific sense of historic character and integrity will be the basis for determining if a project, particularly a larger project, is compatible with the historic character of the district. It is also the foundation for specific guidance given in subsequent sections of the document.

Chapter 3 shapes this portrayal of historic character in two ways. First it presents a historical overview of how and why the camp lots became established and the various social, political, and economic factors that influenced their development, architecture, landscapes, and historical significance. Second, it defines and illustrates the two dominant architectural styles found in the camp lots (i.e., Vernacular Rustic Style and Vernacular Plantation Style) and the various character-defining features that typify these dominant styles and their landscaped settings.

## Project Map:



The primary intent of Chapter 4 (Guidelines for Repair and Rehabilitation) is to provide advice on how to repair and maintain most of the character-defining architectural features in the Historic District and the materials of which they are constructed. Discussed are materials such as masonry, wood, and paints and finishes and features such as windows, doors, and roofing. Also addressed are issues related to plumbing and electrical wiring in historic structures. This chapter essentially establishes some "best practices" for repair and maintenance work. This advice can be applied routinely to small repair projects or to large-scale rehabilitation project that incorporate multiple actions in a single project.

Chapters 5 through 7 address various design options in situations that are most likely to affect the historic context of individual camp lots or the visual integrity of the Historic District. New construction is addressed in Chapter 5 to ensure that any new structures will complement the District's existing historic architecture. New construction should blend with the historic character of a lot or neighboring lots and not aim to copy or imitate existing historic structures or styles. Examples are given on how design options and site selection can be approached in these cases. Chapter 6 sets out the guiding principles for constructing additions to existing structures and for maintaining previously constructed additions. Again priority is given to complementing existing structures but not replicating them. Additions should not detract from existing structures. Efforts to maintain the historic character of the landscaped yards is addressed in Chapter 7. Included are treatment options for existing or proposed site features (e.g., driveways, paths, boundary markers, gates, and retaining walls) and those landscape elements that rely on maintaining living plant communities, whether ornamental plantings or naturalized stands of native and non-native plant species.

### **PHILOSOPHY OF DESIGN REVIEW**

These design standards and guidelines are based on "The Secretary of the Interiors Standards for the Treatment of Historic Properties" and the specific needs of the community. The principal approach in design guidelines is the emphasis on preservation and careful

rehabilitation. This view is illustrated through the use of such words as REPAIR, RETAIN, MAINTAIN and PROTECT. For example, it is important to *repair* original materials rather than replace them; *retain* original landscape features such as stone retaining walls; *maintain* the original wood siding because it is integral in displaying historic character, and *protect* the original setting of the recreation residence to perpetuate its integrity. Guidelines are intended to describe solutions for rehabilitation that might best preserve the historic character of historic properties and districts, while providing a framework and philosophy for those preparing or reviewing project plans.

The Design Guidelines generally focus on exteriors with an emphasis on the main facade of a building, such as that readily visible from the roadway. Although interior spaces may also be historically significant and worthy of preservation, it is primarily the built environment that is visibly accessible to the public that is the subject of the guidelines for preservation. Design options for interiors are much more flexible and largely reserved to the Lessees.

### **THE REAL WORK OF PRESERVATION**

It is individual Lessees who do the real work of preservation by keeping their buildings in good repair, and through their efforts to rehabilitate, restore, and preserve structures in ways that accurately reflect a building's style and history. Such honesty is compatible with making the Kōke'e and Waimea Canyon Recreation Residence Historic District comfortable and appropriate for today's lifestyles.

The overall goal of the Design Standards and Guidelines for the Historic Kōke'e, Halemanu and Pu'u ka Pele Camp Lots is to preserve and protect Kōke'e, not to complicate the lives of Lessees. Our shared heritage, the visual and architectural characteristics of Kōke'e, is precious. It cannot be found anywhere else in the world, nor can it be duplicated or simulated. If our historic structures' exteriors are altered without thought to their original style or to Kōke'e's architectural heritage, we have stolen from our community's future. Preservation is not only for us, but also for those in the past

and the future. We must take the long view, working together as partners and stewards of this community, which is situated in that timeless, uniquely Kōke'e intersection of past and present.

### ***METHODOLOGY***

The State Parks retained Mason Architects to prepare design standards and guidelines for the historic Kōke'e, Halemanu and Pu'u ka Pele Camp on the island of Kaua'i. The history and architectural inventory of the Camp Lots written by Dawn Duensing in 2003 served as the basis for these guidelines.

The guidelines for preservation, rehabilitation, additions, and new construction were completed by Barbara Shideler, AIA, of Mason Architects in June-August 2006. Ms. Shideler is a registered architect in the State of Hawai'i and is trained in architectural history and historic architecture. She has a B.A. in Architecture from the University of Hawai'i at Mānoa; and a Graduate Certificate in Historic Preservation, also from University of Hawai'i at Mānoa. With this training and sixteen years of experience in the field of historic preservation, Ms. Shideler meets the professional qualification standards under Historic Architecture and Architectural History outlined in 36 CFR 61.

The field work, as well as the history and architectural heritage sections of the document were prepared by Dawn Duensing, MA, as a subconsultant to Mason Architects. Ms. Duensing is trained in history and historic preservation. She has a M.A. in History from Northern Illinois University and a Graduate Certificate in Historic Preservation from the University of Hawai'i at Mānoa. With this training and sixteen years experience in architectural history, Ms. Duensing meets the professional qualification standards under Historic Architecture and Architectural History outlined in 36 CFR 61.



**REVIEW PROCESS**

The design review process described in this chapter provides the framework within which State Parks and ultimately the State Historic Preservation Division (SHPD) will determine whether or not a project proposed within the Kōke'e and Waimea Canyon State Parks Recreation Residence Historic District conforms to the Design Guidelines presented in this document.

This decision-making process relies on a three-tiered project review structure with each of the three review levels reflecting the relative scale of a proposed project and the degree to which it could alter the historic character and integrity of a historic structure, its setting, or the Historic District. Accordingly, the greater a project's potential to affect the historic character of a structure or the district, the greater the need to conform to the Design Guidelines and the more rigorous the review process. In general, factors considered when determining which level of scrutiny a project merits include, but are not limited to, the following:

- Overall size or scale of the project;
- Whether a proposed action requires a county or state permit or Board of Land and Natural Resources approval under the terms of the lease agreement;
- Extent to which repairs or rehabilitation efforts affect character-defining elements and/or materials of a historic structure, particularly the structure's exterior;
- Whether alterations or additions will exceed the footprint, height, density, or capacity of an existing structure or landscaping;
- Degree to which proposed actions alter the outward appearance or public view of structures and camp lots or, conversely, affect only areas largely hidden from public view;
- Whether a project will impact the visual integrity of the Historic District; and
- Whether actions are temporary in nature or easily reversible.

The three levels of design review are: 1) review by a newly formed Design Review Committee; 2) review only by the Division of State Parks (State Parks) and the State Historic Preservation Division (SHPD); and 3) no review required. Examples of project types that fall within each of these review categories are presented in this chapter and in Table 1. Most projects will clearly fall within one of the three categories, but others may be less certain. In these cases, advice from State Park or SHPD should be sought to determine which review track is appropriate.

Projects having the greatest potential to affect individual historic structures, camp lots, or the Historic District will be reviewed by a Design Review Committee formed for the purpose of implementing these Design Guidelines and having the experience and background to make the judgment calls needed to determine if a particular project adheres to the guidelines. The composition of this committee, selection of its members, and its responsibilities are described at the end of this chapter. In the overall review process, the Design Review Committee will issue a finding on whether a proposed project does or does not conform to the Design Guidelines and, if not, suggest revisions to bring the project into conformance. These findings will be conveyed to State Parks and SHPD as recommendations.

Projects having the potential to affect the character and integrity of individual structures and camp lots, but on a lesser scale, will be reviewed only by State Parks and SHPD. At both levels, it is SHPD that ultimately determines whether project plans or descriptions fulfill the requirements of the Design Guidelines and are thus an acceptable detailed mitigation plan required under HAR §13-275-8 (h). The design review process is described in greater detail in this chapter and is summarized in Table 2.

For projects that do not require review, Lessees are still strongly encouraged to follow the guidance and recommendations provided in the Design Guidelines. Much of the information presented in Chapter 4 can be applied to relatively minor repair projects and long-term maintenance strategies for which no review is required.

Note that in many cases the Design Guidelines are not meant to dictate a specific outcome to certain design problems but instead offer alternative solutions that fall within a range of design options and approaches that are probably compatible with the historic character of the district. For example, there is considerable latitude in what Lessees can propose when constructing new residences, adding extensions to existing residences, or renovating the interior of a residence if the submitted plan takes into account and addresses the impact the project could have on historic structures or the Historic District. There is less latitude when plans call for the rehabilitation of significant historic recreation residences. In these cases, plans should comply with the Secretary of the Interior's Standards on Rehabilitation and the guidance provided here to meet those standards.

Note also that this review process does not require a Lessee to instigate improvements that are not contemplated. For example, if a Lessee plans to repair a deteriorated porch, the Design Guidelines indicate appropriate methods for such work. If porch repair is the only work proposed by a Lessee, this review process does not require that other building features that may be deteriorated, such as a roof that is in poor condition, be repaired. The Lessee is, however, bound by the lease agreement to keep the recreation residences or camp facilities in good repair.

In all cases, the DLNR divisions involved in this review process will work with the Lessees to find ways to accommodate their proposals while still satisfying the intent of the historic preservation review process and preserving the integrity of the Historic District.

### **LEVELS OF DESIGN REVIEW**

The following outlines the kinds of projects that fall within each of the three levels of review required when a project is undertaken (See also Table 1):

#### **I. DESIGN REVIEW COMMITTEE APPROVAL:**

Applications for projects of the type listed below will be routed to the Design Review Committee for review and comment.

##### ***Major Repairs and Rehabilitation:***

- Renovation or structural alterations that result in a change to the outward appearance of the structure, such as the replacement of the roofs, *lanai*, or windows and restoration of chimneys.

##### ***Additions to Existing Residences:***

- Alteration or expansion of existing structures or facilities that differs significantly from their current size or appearance. County and State permits will probably be required for the associated plan(s).
- Construction or placement of accessory structures greater than 120 square feet if allowed by the Conservation District Use application process.

##### ***New Construction:***

- Construction of new recreation residences or camp facilities.
- Replacement or reconstruction of existing structures and facilities. State or County permit(s) will probably be needed. The newly constructed residence or facility shall be located approximately on the same site and would have substantially the same purpose, capacity, density, height, and dimensions as the structure replaced.

##### ***Demolition or Relocation:***

- Demolition or removal of existing structures or facilities.
- Demolition, grading, removal, or significant alteration of topographic features.

Table 1: Categories of Anticipated Projects or Actions Listed by Level of Required Design Review

**Design Review Committee Review**Major Repairs and Rehabilitation:

- Renovation or structural repairs potentially changes outward appearance (roof, porches, chimneys, exterior walls) and historic character (structures over 50 years old)

Additions to Existing Residences or Facilities:

- Alteration or expansion of existing structure or facilities
- Construction or placement of non-temporary, accessory structures greater than 120 sq. ft. (if allowed by CDUP)
- Need County and/or State permits, DLNR approval

New Construction:

- New recreation residence or camp facility constructed
- Replacement or reconstruction of existing structures over 50 years old (replacement located on same site, has same purpose, capacity, height, and dimensions)
- Need County and/or State permits, DLNR approval

Demotion or Removal:

- Demolition, removal of structure or facilities (structures over 50 years)
- Need County and/or State permits, DLNR approval

Site Work and Landscaping:

- Alteration or clearing of plant cover, including trees in area greater than 10,000 sq. ft. or removing more than five trees (> 6 inches in diameter)
- Major alteration of defined ornamental planting areas or orchards and layout that conveys historic camp lot setting
- Alteration or clearing that affects forested area (dominated by tall-stature or dense vegetation) bordering and defining open lawn or landscaped setting.
- Construction of landscape features greater than 30 inches high (retaining walls, fences, planting borders)
- Erosion or flood control devices or structures

**Departmental Review  
(State Parks and Historic Preservation Division)**Emergency Actions (Review Expedited):

- Repair or reconstruct to same size and condition; electrical or plumbing repairs
- Design Committee Review optional if increased scale of reconstruction or landscaping proposed

Repairs and Maintenance:

- Renovation or non-structural alteration of interior space (e.g., painting, wall and flooring covering, cabinet work) for structures over 50 years old
- Projects not requiring building permit but could affect historic character of structure (for structures over 50 years old)
- Replace component parts (< \$1,000.00, not electric, plumbing, mechanical installation)
- Re-roofing or exterior wall repair not affecting outward appearance or structural components
- Repair work by licensed electrical contractor

Additions to Existing Residences or to Lot:

- Accessory detached structures less than 120 sq. ft. (if allowed by CDUP)
- Retaining walls, boundary markers (less than 30 inches), and walkways adjacent to residence
- Telecommunication equipment, antenna
- Playground equipment (long-term placement)

Site Work and Landscaping:

- Removal or redesign of portions of long-standing ornamental planted areas or orchards
- Removal of vegetation for maintenance when ground disturbance required or more than five trees (< 6 inches in diameter) are removed

**No Review Required  
(Guidelines Encouraged)**Repairs and Maintenance:

- Renovation or non-structural alterations of interior space (painting, wall and flooring covering, cabinet work) for structures less than 50 years old
- Renovation or non-structural alterations of interior space for structures over 50 years old, if minor and work will not affect historic character of the structure

Minor Repairs and Maintenance:

- Routine actions
- Repair of existing structures or facilities (i.e., caulking for doors and windows; repair flashing, rehabilitate hardware)

Site Work and Landscaping:

- Minor landscaping
- Routine actions (e.g. lawn mowing, pruning trees and shrubs)
- Installation and use of temporary tents for gathering, camping



**Site Work and Landscaping:**

- Site work, including landscaping (defined as alteration or clearing of plant cover, including trees) in an area of more than 10,000 square feet. Natural vegetative plant cover, where disturbed, shall be restored or replaced with endemic or indigenous planting or ornamental planting compatible with existing or historic landscaping.
- Major alteration of defined planting beds with ornamental plants and orchards or layout of lawn and planted areas that conveys the setting of historic camp lots.
- Site work, including landscaping (defined as alteration or clearing of plant cover, including trees) that affects endemic or indigenous plant materials and the removal of more than five trees, six inches or greater in diameter measured at ground level.
- Construction of retaining walls, major perimeter fences, and other landscape features greater than 30 inches in height.
- Erosion control, flood control, and other hazard prevention devices or facilities.

## II. **DIVISION OF STATE PARKS AND HISTORIC PRESERVATION DIVISION REVIEW:**

The following types of projects will be subject to review by State Parks and SHPD and will not be routed to the Design Review Committee.

**Emergency Projects:**

In the event of an emergency, the review of repairs will be expedited to restore the integrity of the structures and prevent additional deterioration.

- Repair of structure to the same size and condition as existed prior to the damage.

State Parks may elect to route some emergency reviews through the Design Review Committee if one or more of the following situations exist:

- Reconstruction of a damaged structure;
- Enlargement of a structure; or
- Substantial change in the height of the structure (for example, roof additions)

**Repairs and Maintenance:**

- Projects that include the renovation or non-structural alteration of interior spaces only for structures over 50 years old, including painting, installation of wall or floor covering, and cabinet work. Work will not result in any alteration of the structure's outward appearance.
- Projects that typically do not require a building permit, but require review for conformance with the Design Guidelines because the structure is over 50 years old, including:
  - Repairs that involve only the replacement of component parts of existing structures with similar materials for the purpose of maintenance, and which do not aggregate over \$1,000.00 in valuation in any 12-month period, and do not affect any electrical, plumbing, or mechanical installations.
  - Re-roofing work that will not adversely affect the structural components or the replacement of siding to existing exterior walls that will not adversely affect the structural components of the walls.
  - Repair work performed by a licensed electrical contractor that does not aggregate over \$500.00 in valuation in any 12-month period and does not involve service entrance equipment.

**Additions to Existing Residences:**

- Accessory one-story detached buildings used as tool and storage sheds, playhouses, water catchment, and similar uses, provided the aggregate floor area does not exceed 120 square feet. Accessory uses shall be allowed only if they are consistent with the character of the historic district and are allowed under Conservation District administrative rules.

- Retaining walls, fences, and lot boundary markers that are not more than 30 inches in height, walkways, and outside paving within the leased lot.
- Individual residential television and radio antennas, including dish-type antennas.
- Playground equipment
- Publicly visible signs, including no trespassing and warning signs

#### ***Site Work and Landscaping:***

- Removal or redesign of portions of defined ornamental plantings or orchards and open lawns that convey the long-standing setting of the camp lot.
- Removal of noxious plants and trees for maintenance purposes, including clearing with power hand tools or that which results in only minor ground disturbance.
- Removal of not more than five trees less than 6 inches in diameter measured at ground level.

### **III. NO REVIEW REQUIRED:**

No project review is required by State Parks or SHPD for the following actions although Lessees are strongly encouraged to follow those sections of the Design Guidelines that provide guidance on the approaches best suited for the repair and maintenance of materials originally used in the historic structures:

#### ***Repairs and Maintenance:***

- Projects that include the renovation or non-structural alteration of interior spaces only for structures less than 50 years old, including painting, installation of wall or floor covering, and cabinet work. Work will not result in an alteration of the outward appearance of the structure.
- Projects that include the renovation or non-structural alteration of interior spaces only for structures over 50 years

old if the historic integrity of that interior has been severely altered.

#### ***Minor Repairs and Maintenance:***

- Routine minor repair or maintenance of an existing structure in a manner that conforms to these guidelines, for example caulking around doors and windows, repair of flashings, rehabilitation of hardware, or repainting in the same color scheme.

#### ***Site Work and Landscaping:***

- Landscaping and routine maintenance, including mowing lawns or pruning trees and shrubbery.
- Temporary tents or other coverings, for periods not to exceed 14 consecutive days, if used for private family parties or camping.

### **DESIGN REVIEW APPLICATION PROCESS**

#### **Applications**

Applications for all actions requiring review shall be submitted to State Parks using the Recreation Residence Design Review Form (see Appendix X) [Note: form to be developed] that will be available on the State Parks website [specific address needed] or by request. A minimum of one (1) hard copy and one (1) electronic copy of the submittal with all attachments shall be submitted for review.

Alternatives will be considered if electronic submittals are difficult, in whole or part, for particular Lessees or for a particular proposal. If attached plans are larger than 11 by 17 inches, 6 hard copies of the document shall be submitted.

The application and any supporting documents should contain sufficient information to allow reviewers to determine if the project conforms to the Design Guidelines and will therefore not diminish the historic character and integrity of a historic structure or that of the Historic District. State Parks staff may be contacted for advice on the kinds of information required or requested. Submissions shall include a summary explaining why applicants, or architects and contractors

acting on their behalf, believe their proposal conforms to the Design Guidelines.

Providing sufficient information may require some of the following attachments depending on the scope and nature of the project:

***Location Map:***

- An area plan, with a north arrow and graphic scale, should identify the relationship of proposed uses to existing structures, roads, infrastructure, or major boundaries in vegetation cover.

***Site Plan/TMK:***

- Site plans should include, but are not limited to: dimensions and shape of lot; metes and bounds; and existing features (including vegetation, driveways, utilities, and existing structures). Contour maps should be submitted for projects where slopes are 20% or more.

***Construction Plans:***

- Construction plans shall contain a location map, site plan, floor plan, elevations, and landscaping plans drawn to scale. Additionally, all plans should include a north arrow and graphic scale.
- Construction plans should include, but not be limited to: existing and proposed changes in contours; all buildings and structures with indicated use and critical dimensions (including floor plans) in square footage; landscaping (including buffers and fences); driveways (including widths and material used to level or stabilize driveway surfaces); existing and proposed drainage plans (including erosion sedimentation controls); proposed utilities and other improvements; revegetation plans; trenching, filling, dredging and/or soil disposal.

***Photographs:***

- Current color photographs of the area or applicable structure shall be submitted with all applications. Digital copies of photographs are preferred. If available, historic photographs of the structure or camp lot should be included to illustrate the

historic character of a structure or house lot and thus support proposed rehabilitation or other plans.

**Review Schedule**

State Parks will review all applications for completeness within 15 days of receiving the application. If the application is found to be incomplete, the applicant shall be so notified by a letter stating the reasons. If an application is accepted, the applicant shall be notified by letter and the level of review required confirmed. Physical receipt of an application by State Parks does not constitute acceptance.

If the application will be reviewed by the Design Review Committee, the notification letter will include information on the next scheduled or anticipated Design Review Committee meeting. Applicants will be notified of the date, time, and location of the Design Review Committee meeting no later than six (6) days prior to that meeting. State Parks will notify the applicant within 15 days of the Design Review Committee's recommendations or comments. State Parks and SHPD may be consulted to help applicants rectify concerns raised by the Design Review Committee. A project may be routed to the Design Review Committee a second time if the required revisions effectively result in a new plan. The intention, however, is to have the Design Review Committee review a submittal only once.

If project approval is recommended, State Parks and SHPD will have forty-five (45) days to complete their review. This timeframe is consistent with the historic preservation review process established by HAR §13-275-8(h). SHPD will notify the applicant in writing if the plans are acceptable or not and, if not, outline the changes requested or other concerns. This pre-project review process is complete when SHPD agrees, in writing, that the proposed project plans or descriptions are an acceptable detailed mitigation plan under HAR §13-275-8(h)(8) and that the work can proceed. The overall process is not complete until State Parks verifies that work was completed according to the accepted plan and SHPD concurs.

Table 2: Summary of Major Steps in the Design Review Process

1. Determine level of review required – Design Review Committee, DLNR, or no review (use of guidelines encouraged)
2. Consult with State Parks or SHPD (DLNR) if uncertain about level of review for project
3. Provide architect or contractor with Design Guidelines and inform them of these requirements. Lessees shall apply design guidelines when preparing their own plans or undertaking work.
4. When possible, complete design review process prior to applying for any state or county permits or DLNR approvals required by the lease agreement.  
Written verification that a proposed project conforms to the design guidelines could expedite state and county permit applications routinely submitted to SHPD under Chapter 6E, HRS

5. If Design Review Committee action needed:

- a. Complete submittal form; provide supporting documentation (project description; architectural plans; materials used; photographs of current conditions)
- b. State Parks reviews submittal for completeness; asks for additional information if needed; distributes material to Design Review Committee; schedules meeting
- c. Design Review Committee meets; recommends whether project adheres to guidelines; if not, recommends revisions
- d. Written notification of Design Review Committee finding issued by State Parks within 15 days
- e. State Parks and SHPD work with lessee to resolve concerns if any; major revisions may be resubmitted to Design Review Committee
- f. State Parks submits project proposal to SHPD for review with a recommendation on project's adherence to the guidelines
- g. Pre-project approval process complete when SHPD issues letter concurring that project plans conform to guidelines and project may proceed.
- h. Review process complete when State Parks submits statement to SHPD verifying project completed in accordance with approved plans and SHPD concurs that potential effects on historic structures or the Historic District were mitigated.

5. If State Parks and SHPD review needed:

- a. Complete submittal form; provide supporting documentation (project description; architectural plans; materials used; photographs of current conditions)
- b. State Parks reviews submittal for completeness; asks for amendments or additional information if needed; works with lessee to resolve concerns; may consult SHPD to help resolve concerns
- c. State Parks submits project proposal to SHPD for review with a recommendation on project's adherence to the guidelines
- d. Pre-project approval process complete when SHPD issues letter concurring that project plans conform to guidelines and project may proceed.
- e. Review process complete when State Parks submits statement to SHPD verifying project completed in accordance with approved plans and SHPD concurs that potential effects on historic structures or the Historic District were mitigated.

5. If no review required:

- a. Review pertinent sections of the design guidelines that address the repair and maintenance action or construction action desired.
- b. Consult with State Parks or SHPD for advice on implementing guidelines; identifying sources for appropriate materials or fixtures; or identifying individuals with applicable expertise

If the application will be reviewed only by State Parks and SHPD, the two divisions will have 45 days to complete their review and SHPD will notify the applicant in writing if the plans are acceptable or not. If they are not acceptable, the letter will state the revisions requested or other concerns. This review process is also complete when SHPD agrees that the proposed project plans are an acceptable mitigation plan and State Parks verifies that the work was completed in accordance with the accepted plan.

### **Work Time Frame and Extensions**

Accepted plans and projects will be considered valid 12 months and work is expected to be completed within that time period. If plans change while work is in progress, the Lessees must contact State Parks before undertaking a change or deviation from the accepted plan. Expired project plans may be extended for a period of time deemed appropriate by State Parks and SHPD provided there have been no changes to that plan or the project. Lessees may request time extensions to comply with the conditions of an accepted project or to obtain county and state permits or approvals. Extensions shall be submitted to State Parks prior to the expiration deadline. Without an accepted plan for projects requiring review, the work will be considered a violation of the lease agreement.

### **Violation of Lease Agreement**

In any case where a Lessee has failed to complete the design review process when required or to complete a project as proposed in the accepted plan, the work will be considered in violation of the lease agreement.

### **OTHER PERMITS**

The following outlines the laws, regulations, or permit requirements that may apply to projects or actions that are subject to the design review process outlined in this chapter. A concurrence to proceed under this design review process does not supersede the need to obtain all pertinent county and state permits or approvals. Any work on recreation residences or camps must also conform to the requirements of applicable federal, state, and county codes.

### **Conservation District Use Permit (CDUP):**

State of Hawai'i, Department of Land and Natural Resources. Lands within the State's Conservation District - Title 13 (HAR), Subtitle 1 Administration, Chapter 5, "Conservation District". In some cases, a Conservation District Use Permit (CDUP) may not be approved until other applicable county or state permits have been obtained.

### **State Historic Preservation Division (SHPD):**

State of Hawai'i, Department of Land and Natural Resources. Chapter 6E, HRS, and implementing regulations HAR Chapters 13-275 through 13-284 and 13-300, are intended to provide for the protection and use of historic properties for the benefit of the public. SHPD oversees the historic preservation compliance process. The SHPD makes the final determination on whether any historic sites exist on a property, their historical significance, and treatment.

### **Zoning and Land Use Regulations:**

County of Kaua'i. Kōke'e and Waimea Canyon State Parks are located entirely within the State Conservation District. County zoning rules therefore do not apply.

### **Building Permits:**

County of Kaua'i, Department of Public Works.

*New construction* must conform to all applicable building codes, including, but not limited to, the 1997 Uniform Building Code with local amendments (Kaua'i County Code, Ordinance #773); the 1997 Uniform Plumbing Code with local amendments (Kaua'i County Code, Ordinance #774); and the 1999 National Electrical Code with local amendments (Kaua'i County Code, Ordinance #775).

*Existing buildings* are permitted leniency per UBC Chapter 34: Historic Buildings. Repairs, alterations, and additions necessary for the preservation, restoration, rehabilitation, or continued use of a building or structure may be made without conformance to all the



requirements of this code when authorized by the building official, provided:

1. The building or structure has been designated as having special historical or architectural significance.
2. Any unsafe conditions as described in this code are corrected.
3. The restored building or structure will be no more hazardous based on life safety, fire safety, and sanitation than the existing building.

**Grading, Grubbing, Excavating, and Stockpiling Permits:**

County of Kaua'i, Department of Public Works.

**Permit to Construct a Wastewater System:**

State of Hawai'i, Department of Health. Construction of wastewater system.

***DESIGN REVIEW COMMITTEE***

The Recreation Residences Design Review Committee (Design Review Committee) will assist State Parks in reviewing proposed projects for their adherence to the Design Guidelines and otherwise advise State Parks in matters affecting historic properties or resources within the Kōke'e and Waimea Canyon Recreation Residence Historic District.

The primary role of the Design Review Committee is to review major projects identified as having a substantial effect on a historic residence or the Historic District and to recommend to State Parks whether or not the project or proposed action conforms to the Design Guidelines presented in this document. To clarify a finding, the Design Review Committee may also seek guidance from the U.S. Department of Interior guidance documents or the State Historic Preservation Division. The Design Guidelines will be used to determine the architectural compatibility of proposed changes,

including rehabilitation of an existing historic structure, appropriate new construction, and other projects.

The Design Review Committee shall consist of five (5) members, four (4) of whom shall be appointed by the Board of Land and Natural Resources (BLNR), and one (1) of whom shall be a member of the Kauai Historic Preservation Review Commission. At least one (1) of the four (4) appointed members shall be a Recreation Residence Lessee and two (2) of the four (4) shall be professionals with special expertise in the fields of architecture and architectural history. These professional representatives must meet the qualifications enumerated in 36 CFR Sec. 61, Appendix A. In the event such expertise is not available within the County of Kaua'i, experts from within the State may be contacted to serve on the Design Review Committee. The members shall serve without compensation.

The terms of the Design Review Committee members shall be four (4) years. No member shall serve more than two (2) successive four-year terms. Should a vacancy arise prior to completion of the term, an appointment to fill such vacancy shall be made by the respective appointing authority only for the unexpired portion of the term. The Board shall designate one (1) of the members of the Design Review Committee to serve as the initial Chairman, and one (1) to be the initial Vice-Chairman. Each shall serve for a period of one (1) year and thereafter the Design Review Committee shall elect its own officers on a yearly basis. State Parks shall be responsible for providing administrative support for the Design Review Committee.

The Design Review Committee shall meet as necessary or at least once quarterly unless a meeting is otherwise determined unnecessary. Within 15 days of such meetings, State Parks will provide the lessee written notification of the Design Review Committee's recommendations or comments. All meetings of the Design Review Committee shall be held in public and, to the extent possible, be conducted in accordance with HRS Chapter 92 (i.e., "Public Agency Meetings and Records").

## HISTORY AND CHARACTER

### **HISTORY OF THE KŌKE'E CAMPS AND PU'U KA PELE LOTS**

This history was based on "A History and Architectural Inventory of the Kōke'e Camps and Pu'u Ka Pele Lots, Kaua'i, Hawai'i," which was prepared for the Kōke'e Leaseholders Association and Hui O Laka, Kōke'e Natural History Museum by Dawn Duensing in 2003.

#### **Early Recreational Activities at Kōke'e**

Between 1918 and the late 1950s more than 100 rustic cabins were built on three tracts of lots at Kōke'e, Halemanu, and Pu'u ka Pele on the island of Kaua'i.<sup>1</sup> Located at elevations between 3,200 feet and 3,680 feet, the lots were dispersed among the streams, valleys, and forests of what eventually became Kōke'e and Waimea Canyon State Parks. The tracts were created for the express purpose of providing mountain retreats for Hawai'i residents who had the means to escape the coast's hot, dry summers. The Kōke'e Camps and Pu'u ka Pele Lots, as they came to be known, were unique. These "camps" were the only summer homes permitted on public land in Hawai'i. They were formally planned and modeled on the recreation residences in the U.S. National Forests. The history of Kōke'e demonstrates that the camps were created in the spirit of achieving the greatest public purpose. Consequently, the land was set aside not only for the protection of forest resources and the watershed, but also for recreational pursuits and public access.

The history of the Kōke'e area as a mountain retreat and recreational area began in 1856 when Kaua'i pioneer Valdemar Knudsen obtained a lease from the Kingdom of Hawai'i for more than a hundred square miles of Crown land near Waimea. Knudsen used some of the Waimea uplands near Kōke'e for ranching, but also enjoyed recreational activities. According to Knudsen's son, Eric, his

father was fond of exploring the mountain areas above Waimea and was especially interested in collecting birds and gathering ferns. Knudsen was fascinated by an area called Halemanu, which translated from Hawaiian means 'bird house.' Family lore stated that the Hawaiian bird catchers used a grass house at Halemanu while on their feather-gathering expeditions. Valdemar Knudsen liked the area so much that he had a grass house built for his own use. The grass house was reportedly small, only about 8' x 10', and was used as a weekend retreat and base for explorations. To build Knudsen's house, workers cut heavy timber from the forest for rafters, using the dried bark as a fiber to tie the rafters together. *Pili* grass was gathered from a dry ridge nearby and used to thatch the house. Eric Knudsen explained, "Grass two feet long was laid in handfuls against the slats and laced on until the walls were six inches thick. How sweet it smelled." The house required no windows, as fresh air circulated through the thatch.<sup>2</sup>

After Valdemar Knudsen married and had children, his family outgrew the thatched house at Halemanu. About 1868 he imported lumber from New Zealand, had it hauled up the mountain on ox carts as far as the trail allowed, from where the materials were carried on foot or by horseback. The Knudsen's new house was "long and low with many small rooms and wide verandas." For three months each summer, Knudsen's family relocated to Halemanu from the hot, dry climate at the family's Waiawa home. At Halemanu they enjoyed the damp, cool, mountain air and the natural beauty that surrounded them. Knudsen took his children on scenic horseback rides and picnic excursions to the rim of Waimea Canyon or Kalalau Valley. He was especially fond of telling his children the legends and lore the Hawaiians had taught him about the Kōke'e area. While at Halemanu, servants did chores in the yard and garden, tended the horses, cut wood for the cook stove, and hunted for pigs.<sup>3</sup>

<sup>1</sup> Several place names were historically associated with the Waimea District's upland areas that became part of Kōke'e and Waimea Canyon State Parks. For purposes of this study, these general areas are referred to as "Kōke'e." Other distinct locales and place names in the Kōke'e area were Halemanu, a valley and stream in Kōke'e State Park; and Pu'u ka Pele, a hill/ridge area in Waimea Canyon State Park.

<sup>2</sup> Eric A. Knudsen and Gurre P. Noble, *Kanuka of Kauai, the Story of a True Pioneer*, (Honolulu: Mutual Publishing), 1999, 97-98.

<sup>3</sup> Knudsen and Noble, *Kanuka of Kauai*, 126-127.

In 1898 Knudsen died and his estate passed to his sons, Augustus and Eric, whose firm was known as the Knudsen Brothers.<sup>4</sup> Under Augustus's leadership, Kōkeʻe became well known as a camp site and recreational area. Perhaps more importantly, Knudsen was instrumental in responding to environmental problems at Kōkeʻe. He realized that the uplands at Kōkeʻe were of almost no value for ranching. Knudsen surmised that perhaps two hunters could make a poor living by hunting wild cattle in the forest and selling the meat and hides. In some cases, hunting cattle was a losing venture because it cost more to transport the wild cattle out of the forest than the meat was worth. More importantly, Knudsen observed that wild cattle trampled and denuded the forests, which not only eliminated vegetation, but also eroded valuable soil. Knudsen noted that the consequence of forest destruction was dry mountain bogs and streambeds. He, as well as those in Hawaiʻi's sugar industry, recognized that trees were essential to storing water and preserving the watershed.<sup>5</sup> A healthy watershed was critical for providing irrigation water for the sugar industry.

Rather than ranching, Knudsen set his sights on eliminating cattle and wild goats from the upland forests. He reported that his family's relentless hunting had practically eliminated the wild cattle problem as early as 1882. By 1890, Knudsen believed that wild cattle on his land as well as adjacent Nā Pali areas were practically extinct. He also noted that the Knudsen Brothers firm built a fence to prevent cattle from re-entering the forest and estimated that the fence protected an area as large as 30,000 acres. After eliminating cattle from the forest, Knudsen experimented with reforestation. He planted Australian koa, ironwood, and other non-native trees, but also observed that the native koa forest was regenerating. Wild goats, however, continued to do great damage on the Waimea Canyon *pali* [cliffs], leaving in their wake bare rock.<sup>6</sup>

<sup>4</sup> John William Siddal, ed. *Men of Hawaii* (Honolulu: Honolulu Star Bulletin Ltd., 1921) 239-240.

<sup>5</sup> Philip L. Weaver, "A Tropical Mountain Park," *Mid Pacific*, vol. IX no. 3 (1915): 295; Augustus F. Knudsen, "Report of Mr. Augustus F. Knudsen," *Second Report of the Board of Commissioners of Agriculture and Forestry*, year ending December 31, 1905, 90, Archives of Hawaiʻi (AH). Hereafter cited as BCAF Report.

<sup>6</sup> Knudsen, "Report of Mr. Augustus F. Knudsen," 90-91.

Under Augustus Knudsen's stewardship, the Kōkeʻe area became a recreational camping area that was enjoyed by his friends from Kauaʻi and beyond. He was famous for his annual "camping parties" and enjoyed entertaining guests at the family's Halemanu retreat. As an avid outdoorsman, he was known as a "perfect genius" in finding paths, one who exercised the "most uncommon sense" and "instinctively" knew the topography of the land. Guests delighted in his guided hikes. Although the family continued to use the house at Halemanu, early camping structures also included a variety of canvas buildings and tents. Another camp site was established higher up the mountain at Kōkeʻe, which provided a convenient starting point for Knudsen's hiking expeditions.<sup>7</sup>

The primary objective of these high-elevation camps was to provide an escape from the hot summer days of Kauaʻi's coastal towns. Kōkeʻe offered "bracing" air, rushing streams, the pleasant sounds of mountain birds, and the scenic beauty of the mountains and Waimea Canyon. Early photographs of the Kōkeʻe area depict Knudsen and his guests, who were prominent members of Kauaʻi and Honolulu society, enjoying a variety of "camping" activities. "Camping" meant spending time outdoors and included swimming in a cold stream, tennis on Knudsen's tennis court, tending the rose garden, hiking, picnicking, and horseback riding.<sup>8</sup> At some point in the early 1900s, Knudsen granted other families the right to establish camps on his land, including the Danfords (circa 1907), Fayés, Hansens, and also the Kumuwela Camping Club.<sup>9</sup>

Although the Knudsen's house at Halemanu was apparently quite substantial as described by Eric Knudsen, many of the cabins in the early 1900s were small board-and-batten structures that were no more than shelters and sleeping quarters. Other forms of early shelters were wood platforms with canvas walls and a canvas roof supported by *ʻōhiʻa* branches. Some canvas structures were quite elaborate, while others were no more than "pup" tents. Facilities

<sup>7</sup> Gerrit P. Wilder, "Among the Canyons of Kauai," *Mid Pacific*, vol. IX no. 3 (1915): 49.

<sup>8</sup> Kokee File, Knudsen Family File, Danford Family File, Photograph Collections, Kauaʻi Museum.

<sup>9</sup> List of Applicants for Camp Sites, Kokee Camps: General Permits, circa 1917-1918, AH.



included outhouses, showers built in streams, and separate kitchen structures. Kaua'i's prominent families apparently could not do without servants while "camping." Ancillary structures circa 1900 included servants' quarters, tack rooms, and stables. Photographs indicate that getting families and servants up to Halemanu and Kōke'e was a major production that required numerous horses and wagons to carry people, crates and/or bags of supplies.<sup>10</sup> To make travel to Kōke'e easier for his guests, Knudsen built a road along the rim of Waimea Canyon.<sup>11</sup>

### Planning for the Future

In 1903 the Territory of Hawai'i enacted legislation that created the Board of Commissioners of Agriculture and Forestry (BCAF) and authorized the framework for forest reserves. Although the Kingdom of Hawai'i had the authority since 1876 to set aside land for watershed protection, nothing was done, and it was not until the BCAF was established that action was initiated. In 1907, Nā Pali-Kona Forest Reserve was proclaimed, which included nearly 20,000 acres of land leased to Knudsen. When his leases expired in 1917 and 1920, the land was to automatically revert to the government and become part of the forest reserve. The BCAF astutely recognized that Knudsen had established a model for how Kaua'i's uplands ought to be managed, and praised Knudsen Brothers' contributions in eliminating cattle, regenerating the forest, and improving the watershed. Over the course of the decade until his lease expired, Knudsen cooperated with the BCAF in determining Kōke'e's future. Documents show that Knudsen and Superintendent of Forestry Charles S. Judd not only established the precedent for how to manage Kaua'i's forests and watersheds, but also set the standard for public enjoyment of the land as well.

<sup>10</sup> Kokee File, Knudsen Family File, Danford Family File, Photograph Collections, Kaua'i Museum. It is unknown how large Knudsen's original cabin was. Over the decades the cabin was probably enlarged so that by the 1980s, the structure was about 3,500 square feet. See also *Honolulu Star-Bulletin*, "Emotions Run High at Bidding for Kokee Leases," July 24, 1985.

<sup>11</sup> Weaver, "A Tropical Mountain Park," 294-295.

While the BCAF was busy establishing forest reserves to protect Kaua'i's watersheds, other possible uses for government forest reserves were also being suggested. The earliest written reference to public recreational camp areas at Kōke'e was likely a 1912 Division of Forestry report. First, the report described the area leased to the Knudsens and emphasized the primary importance of Waimea's upland streams: irrigation development and power generation. Secondly, the report mentioned that Knudsen wanted to continue camping at Halemanu after his lease expired. The writer of this report, who was likely the Territorial Superintendent of Forestry Charles S. Judd, speculated on what might happen to Knudsen's camping area. He believed that the mountain camp at Halemanu was one of several valleys that offered "extremely attractive" camp sites. "Unquestionably," the report stated, "some arrangement should be made, when the present leases run out, to lease these valleys, under restrictions, as camp sites." The writer noted that leasing government lands in forest reserves for camp sites could be profitable, pointing out that both Wisconsin and New York had similar arrangements. The Kōke'e area was considered suitable for camping as it "would not be injured" by the campers. The report emphasized that those areas further up the valley where streams originated should be restored to their pristine condition.<sup>12</sup> The motive for this 1912 report is not clear. It is possible that the writer suggested the idea of public camp sites at Halemanu in order to justify Knudsen's continued use of his Halemanu camp site after his lease expired. By providing public camp areas, Knudsen would also be able to maintain his use of the area. The writer may have also genuinely believed that the New York and Wisconsin precedents would be good for Hawai'i's people, especially if it could be economically profitable.

Augustus Knudsen actively promoted the idea that the government should designate land at Kōke'e for summer camp areas for the general public. On one level, Knudsen appeared to be concerned about what the government might do with the land once it reclaimed control of the property. He may have worried that the land would be

<sup>12</sup> "Confidential Report to the Board of Commissioners of Agriculture and Forestry, Honolulu," by the Division of Forestry, September 3, 1912, 1-2, 4, AH.

leased for cattle grazing or other destructive purposes. On a personal level, he was probably anxious about maintaining his right to use his summer camp and house at Halemanu. A 1915 article in *The Mid Pacific* magazine seemed to suggest, as did the Forestry Division report, that one way for Knudsen to keep the rights to his Halemanu camp was to convince the government to develop Kōke'e camp sites for the general public.<sup>13</sup>

*The Mid Pacific* featured Knudsen's "tropical mountain park" in March 1915. Writer Philip Weaver praised Knudsen's mountain camps at Halemanu and Kōke'e. Weaver enthusiastically reported on the beauty of Waimea Canyon and his exhilarating activities at Kōke'e. He applauded Knudsen for opening his land and camp sites to Honolulu school boys every year, making trails accessible to anyone who enjoyed hiking, building a road into the area, and working to preserve the forest. The article also provided an opportunity for Knudsen to promote the idea of preserving the Kōke'e region for future generations. Knudsen argued that the land was of little value for cattlemen, but could be of enormous value to the general public. He emphasized, "this whole region can be preserved [sic] for all time for the use and pleasure of the whole public, and not for a lucky few, if the public realize the desirability of the place as a forest reserve." Knudsen mentioned several benefits to be gained by preserving the forest, including maintaining a healthy watershed and providing an attractive area for camp sites. He speculated, "campers could find a paradise for short trips and at little expense." Knudsen emphasized that preserving Kōke'e would be just as much a delight for Kaua'i residents as Yosemite was for Californians. He pointed out that the government would soon regain control of the Kōke'e forests (without noting that he personally would lose his lease and Halemanu house) and urged people to make it known that Kōke'e should be made available to the general public, not controlled by private interests.<sup>14</sup> At least two other articles in *The Mid Pacific* in

1915 promoted the Waimea Canyon area, one of which featured Knudsen's Kōke'e camp and mountain adventures.<sup>15</sup>

The proposal for public camp sites at Kōke'e generated public attention in 1916 when the topic was frequently discussed in the pages of *The Garden Island* and by the Kaua'i Chamber of Commerce. In September 1916, George K. Larrison, the Territory of Hawai'i Superintendent of Hydrography, expressed his personal opinion to the governor that a park at Kōke'e would be a "wonderful thing for the islands." Larrison's suggestion resulted from a visit to Kōke'e, where he camped, woke up to the chilly thirty-six degree air, and prepared his breakfast over a wood fire. He believed that Kōke'e's cool change of climate was just what Honolulu and other coastal residents needed to refresh themselves during the hot summer months. Larrison emphasized that if a park and camp sites were created, it would provide a nearby retreat for territorial residents, who would no longer need to travel to the U.S. mainland to find relief from the heat. Larrison continued by describing the wonderful hikes and horseback rides he experienced on his Kōke'e vacation.<sup>16</sup> A *Garden Island* editorial agreed with Larrison, stressing that Kaua'i needed a "cool and delightful" place for its own residents to escape "the heat and depression of the beaten paths of nine months." The paper indicated that many Kauaians tried to escape the summer heat by going to the mountains, to Hanalei, or to the mainland. The Kōke'e area, with its cool climate, could be a perfect summer alternative. The editorial concluded that the government should provide camp sites and a good road to Kōke'e so that Kaua'i's people could enjoy an easily accessible summer retreat.<sup>17</sup> Governor Pinkham enthusiastically supported Larrison's idea and promised to consider the matter.<sup>18</sup>

The Kaua'i Chamber of Commerce eagerly supported the idea promoted by Larrison and echoed by *The Garden Island*. Chamber

<sup>13</sup> Weaver, "A Tropical Mountain Park," *Mid Pacific*, 294-296.

<sup>14</sup> Weaver, "A Tropical Mountain Park," 294-296.

<sup>15</sup> Wilder, "Among the Canyons of Kauai;" Weaver, "A Tropical Mountain Park;" and Alexander Hume Ford, "The Waimea Canyon," *The Mid Pacific*, vol. IX no. 4 (1915): 375-379.

<sup>16</sup> "Larrison Dreams of Park at Kokee," *The Garden Island*, 26 Sept. 1916.

<sup>17</sup> "An Ideal Summer Resort," editorial, *The Garden Island*, 17 Oct. 1916.

<sup>18</sup> "Planning a Park for Waimea Lands," *The Garden Island*, 17 Oct. 1916.

member George Ewart pointed out that immediate planning was crucial, as Knudsen's lease on the subject property would expire in 1917; thereafter the land would revert to the government. To promote the camp sites idea, the Chamber established a commission, which was chaired by Kaua'i County Engineer J.H. Moragne. In addition to the commission's Kaua'i members, the Chamber asked Honolulu notables to serve, including Commissioner of Public Lands B. G. Rivenburgh, Chief Forester Charles S. Judd, and Larrison.<sup>19</sup>

The Chamber of Commerce wasted no time in investigating the summer camp proposal. Within a month, it arranged for the Honolulu commission members to visit Kōke'e.<sup>20</sup> After touring the area, the commission reported that it unanimously supported the proposed summer camp; however, they believed that the project might be dependent on building a serviceable road to Kōke'e.<sup>21</sup> Despite the commission's unanimous agreement, Rivenburgh returned to Honolulu and criticized the summer camp plan in the *Honolulu Advertiser*. He opined that Hawai'i did not need a camping park on Kaua'i any more than a monkey needed two tails. As the Commissioner of Public Lands, Rivenburgh apparently saw no need to establish a formal camp area. He instead suggested that the land was already available as a forest reserve, and residents only had to ask for permission to go camping on it. It is not clear why Rivenburgh first supported, then publicly condemned the Kōke'e camp proposal. It is obvious that he did not enjoy his Kōke'e visit. He grumbled to the *Honolulu Advertiser* about the "sort of trail" (road) to Kōke'e and complained that he was "half frozen" most of the time.<sup>22</sup>

With only three months remaining before a portion of Knudsen's leased lands reverted to the government, six written applications and several verbal requests for camp sites had already been submitted to

the BCAF. These applications were from Knudsen's friends who had been going to Kōke'e for many summers and had already erected "more or less permanent" camp buildings, i.e. summer cabins. By September 1917, the Division of Forestry plans for a public camp area were nearly ready. Forestry documents and newspaper articles indicated that Judd completed most of the planning and surveys for the Kōke'e Camps. Judd concluded that the Kōke'e region was suitable for a camping retreat because it was the most accessible and extensive area on Kaua'i that could be used for that purpose. He reiterated that Kōke'e's 3,500-foot elevation provided a respite and a "bracing climate for those who seek relief from the heat of the lowlands." In planning the Kōke'e Camps, he used the National Forest Service as a model, since that agency administered areas that allowed private individuals to lease land for summer homes. After studying the Forest Service "recreational residence" program, Judd concluded that granting camping permits on Kaua'i was feasible if there were specific restrictions to protect the forest reserve. His recommendations included revocable five-year permits for designated camp lots, a "small" permit fee, and a time limit of 14 days for campers to reside at Kōke'e. He also recommended that \$100 worth of improvements be made to each lot and that a septic system be built. Finally, Judd wanted fire rules and a ban on cutting live trees. With this in mind, he recommended that a survey be prepared to lay out the camp sites. Also noteworthy was Judd's advice that the BCAF set aside land at nearby Pu'u ka Pele for Nā Pali-Kona Forest Reserve when Knudsen's other lease expired in 1920. He wanted to ensure that the land along the edge of Waimea Canyon would be protected for future generations.<sup>23</sup>

### Knudsen's Lease Expires: Kōke'e Camps Established

Halemanu and Kōke'e reverted to the Territory of Hawai'i and to the jurisdiction of the BCAF when Knudsen's lease expired in December 1917. Judd prepared a survey and staked the summer camp sites at Kōke'e in mid 1918.<sup>24</sup> A survey map illustrated that the Kōke'e

<sup>19</sup> "Business Transacted by Chamber of Commerce," *The Garden Island*, 7 Nov. 1916.

<sup>20</sup> "For Summer Camp Investigation," *The Garden Island*, 28 Nov. 1916.

<sup>21</sup> "Dinner Session of Commerce Body," *The Garden Island*, 19 Dec. 1916.

<sup>22</sup> "Park Idea a Joke, says Rivenburgh," *The Garden Island*, 26 Dec. 1916.

<sup>23</sup> "Division of Forestry Report to the Board of Commissioners of Agriculture and Forestry," 21 Sept. 1917, 1-3, AH.

<sup>24</sup> "Camp Sites are Laid Out by Chas. S. Judd," *The Garden Island*, 20 June 1918: 1.

Camps were situated along the shallow valleys at Kōke'e and Halemanu, with camp sites laid out along the Kōke'e, Maluapopoki, Nawaimaka, Noe, and Elekini'iki streams.<sup>25</sup>

The BCAF emphasized that it was making the Kōke'e Camps available in response to requests from area residents who wanted the same types of privileges as the "many thousands" on the mainland that had summer homes in the U. S. National Forests.<sup>26</sup> Franklin K. Lane, Secretary of the Interior, commented on the importance of public land:

"Those in the lower altitudes need the change in air that comes with the ascent to the mountains, and I am in hope that out of your public lands...there will be reserved on every island mountain a public park where those may resort who come from the lands below, where the transient may pass the night, or those who wish may have their cottages.... As the man of wealth now wisely has his hill house and his seaside house, so should there be reserved for those of more modest means some opportunity to gain the advantages of the rarer, cooler air of higher altitudes."<sup>27</sup>

The BCAF agreed with Lane and noted that it was responding to both his statements and island residents' need to escape the heat of the lowlands for the "invigorating" climate and pleasant surroundings of Kōke'e. The "Kōke'e Camps" in the Nā Pali-Kona Forest Reserve were set aside and opened to the public in 1918 for "the recuperation of bodily energy." The BCAF noted that the camp was favorably located near the scenic beauties of Waimea Canyon, where the rainfall was not excessive and the nights were always cool. Forty-seven camp sites that varied in size from .3 to 2.0 acres were

surveyed and laid out. Campers were to be issued five-year permits at the rate of \$25 per acre. A \$500 bond was required to insure that lessees fulfilled the terms of their agreements.<sup>28</sup>

Application lists for the Kōke'e Camps included Kaua'i's most prominent citizens and were compiled as early as August 1917. By the end of 1917, seventeen individuals had applied for camp sites. By August 1918, thirty-two applicants were on the Division of Forestry list for camp permits. An undated list of permit holders, which may have been from 1918 when the camp areas were established, indicated that twenty-eight permits were issued for Kōke'e camp sites. Permit holders included the Knudsen, Fayé, Danford, and Hansen families who already had camp sites and may have had permanent camp structures at Halemanu. Other permits went to clubs, including the Hawaiian Trail & Mountain Club, the Kumuwela Camping Club, the YWCA, and a "boys camp" that Augustus Knudsen had established. Notable Kaua'i individuals also obtained Kōke'e Camp permits, including C. A. Rice, Philip Rice, Mabel I. Wilcox (as well as three other Wilcox family members), and B. D. Baldwin. The Knudsens, Annie (Valdemar's widow), Eric, and Augustus, obtained rights to four lots at Halemanu, one of which was used for the boys camp.<sup>29</sup>

The conditions of the camping permit required occupants to use their camp site within six months of signing the lease and at least fourteen days each year. Permit holders were required to make improvements worth \$100 to the property. Campers were also responsible for compliance with sanitary and refuse regulations, which included building septic systems. Other rules intended to protect the forest: campers were not allowed to cut live timber or cut trails through the forest; they were forbidden from bringing in "plant life of any nature or seeds for planting" without special permission

<sup>25</sup> "Camp Sites are Laid Out by Chas. S. Judd," *The Garden Island*, 20 June 1918; T. B. Buch, Surveyor, "Na Pali-Kona Forest Reserve Kokee Camps, Kauai, Hawaii Territory Survey, June 1918," AH.

<sup>26</sup> BCAF Report, *Biennial Period Ended December 31, 1918*, 40, AH.

<sup>27</sup> "Kokee Camps," *The Hawaiian Forester and Agriculturalist*, vol. XV no. 8 (1918): 260-262, AH.

<sup>28</sup> "Kokee Camps," *The Hawaiian Forester and Agriculturalist*, vol. XV no. 8 (1918): 260-262, AH.

<sup>29</sup> "List of Holders of Permits in the Kokee Region within the Na Pali-Kona Forest Reserve, Kauai, Board of Agriculture and Forestry," n.d., circa 1917-1918, AH.

from the Superintendent of Forestry; they were required to keep their lots clear of lantana and other noxious weeds.<sup>30</sup>

### Not Enough Happy Campers

While some Kauaians were no doubt pleased to finally have the Nā Pali-Kona Forest Reserve land available for public camps, not everyone was happy with the initial results. During the first year it appears that only twenty-eight of the forty-seven camp sites may have been leased, leaving nineteen lots empty for prospective campers.<sup>31</sup>

The foremost complaint about the Kōke'e Camps was that the lease costs were perceived as prohibitive for the average resident. A 1918 *Garden Island* editorial pointed out that Secretary of the Interior Lane had wisely observed that the wealthy in Hawai'i already had suitable mountain and lowland homes. The writer agreed with Lane's declaration that those of modest means should have a fair chance to lease a camp site. The editorial pointed out that Kōke'e leases were not suitable for those of modest means, although it did not define "moderate means." First, \$25 dollars a year for "absolutely unimproved waste land fifteen or twenty miles from anywhere" was not considered a nominal cost, which was what the Division of Forestry had promised. Another major problem was that lessees were forced to put \$100 worth of improvements on land that they might occupy for only five years as the leases were not automatically renewable. The lessees also had to furnish a \$500 bond, which was considered an extraordinary amount of money. One camper complained that the lease conditions were "shameful and outrageous." The editorial concluded that the government was exploiting the man of moderate means. "We are almost ready to wish ourselves," the writer continued, "back under the monopolistic but fairly generous control of the private lessee [Knudsen]."<sup>32</sup>

<sup>30</sup> "Kokee Camps," *The Hawaiian Forester and Agriculturalist*, vol. XV no. 8 (1918): 262-264, AH.

<sup>31</sup> "List of Holders of Permits in the Kokee Region within the Na Pali-Kona Forest Reserve, Kauai, Board of Agriculture and Forestry," n.d., circa 1917-1918, AH; *The Hawaiian Forester and Agriculturalist*, vol. XXIII no. 2 (1926): 13, AH.

<sup>32</sup> "Prohibitive Rental of Kokee Camping Sites," *The Garden Island*, 24 Sept. 1918.

The Chamber of Commerce led the crusade for reduced camping fees. The organization was disappointed that it had worked to assure that local residents had reasonable access to Kaua'i's uplands. Rather than achieve reasonable access, chamber members believed that the leases were so overpriced that only the well-to-do could enjoy Kōke'e, which left out local families. They felt that a \$2.50 to \$5.00 per acre rental, rather than the set price of \$25 an acre, would be fair. They also charged that the \$500 bond was "a humiliating and unnecessary annoyance" and asked the government to review its policies. Eric Knudsen also complained that the lease rents were too high. He noted that his family had occupied their summer camp for sixty years. "In all that time," he added, we "never realized how exceedingly 'valuable' that country was." He reported that his rent for the entire upland area had been \$100 annually, which he considered to be more than the land was worth.<sup>33</sup> Again, neither the newspaper nor the Chamber of Commerce defined who was of "moderate means."

The Chamber of Commerce's outcry against the excessive Kōke'e rents continued until the end of 1918. In January 1919 the BCAF announced that the annual fee would be reduced from \$25 to \$10 an acre, and the \$500 bond would no longer be required. The Division of Forestry refused to give lessees the right of renewal, but to encourage campers to make improvements, the terms of the leases were extended from five to ten years.<sup>34</sup>

### Pu'u ka Pele Forest Reserve

The next challenge for the Division of Forestry, which was still under Judd's leadership, was to decide how to incorporate the Pu'u ka Pele area into the forest reserve after the Knudsen lease to that parcel expired in 1920. As previously mentioned, Judd's primary interest

<sup>33</sup> J. M. Lydgate, letter from Kaua'i Chamber of Commerce to the Board of Commissioners of Agriculture and Forestry, 18 Oct. 1918, AH; "Kokee Summer Camps," *The Garden Island*, 22 Oct. 1918.

<sup>34</sup> "Na-Pali-Kona Summer Camps," *The Garden Island*, 24 Dec. 1918; "Forestry [sic] Board Grants Requests," *The Garden Island*, 28 Jan. 1919; C. S. Judd, letter to Kauai Chamber of Commerce, 21 Jan. 1919, AH.



was that an area of land along the edge of Waimea Canyon would be protected for future generations.<sup>35</sup>

The Chamber of Commerce was also interested in the future of the Pu'u ka Pele lands and wanted more camping areas set aside for people who might prefer a site further *makai* than Kōke'e. The chamber pointed out that the Pu'u ka Pele area was a lovely mountain setting, with spectacular views of Ni'ihau, and close to the grandeur of Waimea Canyon. Some chamber members asserted that Kōke'e was no place for summer camping, but Pu'u ka Pele was ideal as it had a cool invigorating climate, but less rain than Kōke'e. Pu'u ka Pele had the additional benefit of being only twelve miles from the main road.<sup>36</sup>

Judd's work of protecting the forest was not completed. In October 1918, he made his case for adding 4,900 acres of land at Pu'u ka Pele to Nā Pali-Kona Forest Reserve. Judd noted that the area consisted of the deep canyon country of upper Waimea Canyon and an upland plateau running from Pu'u ka Pele Ridge. He reported that the upland plateau had been fenced since 1898 so that the koa forest had regenerated. This forest was similar to land in the adjacent forest reserve, thus it also deserved protection. Judd opined that land along the Pu'u ka Pele Ridge was suitable for camp sites because the area was naturally protected by inaccessible valleys and cliffs, and on the south, the Knudsens' fence. The remaining portion of the land Judd recommended for inclusion into the forest reserve featured the most scenic parts of the Waimea Canyon, including the Waiahulu and Po'omau Stream valleys. Judd described the scene:

"Canyon walls rise precipitately, in many cases for several hundred feet sheer, while in the remainder of the two thousand or more feet to the top of the ridges the cliffs are hardly less steep. In many places the steep side ridges are sharply cut by

erosion into pinnacles and castellated outposts, which with the distant waterfalls, and the variety of brilliant hues furnished by outcropping strata, the red volcanic soil, and the green vegetation make the section one of the very great scenic interest[s]. It is eminently fitting that such an area be retained permanently under the control by the Territory and its delights made available to the public."<sup>37</sup>

Judd urged the BCAF to establish the Pu'u ka Pele Forest Reserve, noting that government control of the land was important in order to control the wild goat population that damaged the canyon walls. The Pu'u ka Pele Forest Reserve was proclaimed by Governor C. J. McCarthy on December 31, 1918. The forest reserve encompassed 4,900 acres, including the most scenic part of Waimea Canyon and a large area of upland plateau that featured a regenerating koa forest. The BCAF planned to fence the reserve and remove wild goats.<sup>38</sup>

### Establishing a County Park at Pu'u ka Pele

The local community, led by the Chamber of Commerce and the Kaua'i Planters' Association, spearheaded the drive to establish a county park and additional camp sites at Pu'u ka Pele. It is not clear exactly why these local organizations wanted another camp area when Kōke'e was not fully leased. They did note that Pu'u ka Pele was drier and closer to the main road. Kauaians may have disliked the territorial government's control of the Kōke'e Camps or continued to believe that those sites were too expensive. In the end, it was clear that the Chamber of Commerce, the Kaua'i Planters' Association, and the Kaua'i County Board of Supervisors unanimously agreed that the people of Kaua'i needed a mountain camp that was operated by their own Kaua'i County government.

The Chamber of Commerce "camp site committee" worked to establish summer camp sites at Pu'u ka Pele. Even though the Pu'u

<sup>35</sup> "Division of Forestry Report to the Board of Commissioners of Agriculture and Forestry," 21 Sept. 1917, 1-3, AH.

<sup>36</sup> "Na-Pali-Kona Summer Camps," *The Garden Island*, 24 Dec. 1918; "As to Kokee," *The Garden Island*, 22 Oct. 1918.

<sup>37</sup> C. S. Judd, "Division of Forestry Report to the Board of Commissioners of Agriculture and Forestry," 16 Oct. 1918, 1-3, AH.

<sup>38</sup> *BCAF Report, Biennium Period Ended December 31, 1918*, 22, 24, 29, AH.

ka Pele Forest Reserve was proclaimed in 1918, the Knudsen Brothers maintained control of the property until their lease expired in 1920. The chamber committee met with Augustus Knudsen in early 1919, who agreed to lease ten acres for camp sites. The Chamber of Commerce hoped that when the land reverted to the territory, the government would extend Knudsen's generous conditions. The site selected was at an altitude of 3,435 feet, about two miles from Halemanu on the edge of Waimea Canyon. The chamber favored the site because it was closer to the main road and provided quick (about three hours) access from Līhu'e. The chamber hoped the area would be an ideal camping spot and also desired to someday provide transient accommodations.<sup>39</sup>

The sugar plantations had played a role in Kōke'e's history since Knudsen began inviting his friends from the sugar companies to his camping parties. The plantations became involved once again when the Kaua'i Planters' Association (KPA) enthusiastically endorsed the Chamber of Commerce's proposed Pu'u ka Pele summer camp. Speaking to that group, E. H. W. Broadbent, who apparently belonged to both organizations, emphasized that every plantation on the island would take advantage of the new camp. He believed that the Pu'u ka Pele location was a "perfect bonanza" for plantation employees who might otherwise travel to the mainland for rest and relaxation. It was easily accessible and would provide a good family vacation at a nominal price. He predicted that after a few weeks at Pu'u ka Pele, "plantation men" would return to work as "new" men. The Planters' Association appointed its own committee to work with the chamber's committee.<sup>40</sup> In an era when most Hawai'i residents never had an opportunity to travel to the mainland, Broadbent's statement makes it apparent that the proposed Pu'u ka Pele camp sites, while providing more lots for Kaua'i families, still would not be within the means of the majority of island residents.

The joint committee's major objective was to secure the land beyond the expiration of Knudsen's lease in 1920. Without an option from the Forestry Division, the groups were hesitant to facilitate any

permanent development. To address this problem, a special committee was organized to speak to the Knudsens about relinquishing their rights to the land a year and a half prior to the 1920 lease termination. The Knudsens supported the joint committee's efforts to provide public access to the forest and agreed to the early termination of a portion of their lease.<sup>41</sup>

The Chamber of Commerce and Planters' Association then took their plan to the Kaua'i County Board of Supervisors. J. H. Moragne, who had chaired the original chamber committee on the Kōke'e Camps and was still the county engineer, pitched the program to the Supervisors in terms of a plan to transform the area into a county park. The joint committee's original ten-acre camp site became a proposed Pu'u ka Pele County Park that would consist of 200 to 300 acres of land released from the forest reserve. The Supervisors approved of the joint committee's plan and authorized Moragne to go to Honolulu to present the matter to the legislature, governor, and the BCAF, in hopes that those agencies would work with the county and grant the use of forest reserve land. Moragne's chief goal was to secure title to the land for a county park. In respect to the county park proposal, the Board of Supervisors also committed the county to improving the road to Kōke'e.<sup>42</sup>

Moragne went to Honolulu to present his survey of the 416 acres to be withdrawn from the forest reserve for use as a county park. The BCAF approved Moragne's proposal and in 1919, Governor McCarthy signed a proclamation withdrawing the acreage along the edge of Waimea Canyon from the forest reserve and turning it over to the County of Kaua'i for development as a county park and camp area. The BCAF announced that it would be open to campers the following summer.<sup>43</sup> County records referred to the new camp sites as the "Pu'u ka Pele Lots."

<sup>39</sup> "Kaana Chosen for Camp Site," *The Garden Island*, 11 Feb. 1919.

<sup>40</sup> "Summer Camp Finds Favor," *The Garden Island*, 18 Feb. 1919.

<sup>41</sup> "Summer Camp Finds Favor," *The Garden Island*, 18 Feb. 1919; "Minutes of Supervisor's Meeting," *The Garden Island*, 11 March 1919.

<sup>42</sup> "Minutes of Supervisor's Meeting," *The Garden Island*, 11 March 1919.

<sup>43</sup> "The Puu Ka Pele Mountain Park," *The Garden Island*, 18 March 1919: 1; BCAF Report, *Biennium Period Ended December 31, 1920*, 24, AH.

In June 1919, *The Garden Island* reported on the popularity of the Pu'u ka Pele region for summer outings, thanks to the road improvements completed by the county. The paper related that numerous local families were making the drive from Līhu'e to Pu'u ka Pele in an easy two-and-a-half hours. Families were enthusiastically praising the wonderful scenery and invigorating climate. One of the favorite midsummer activities was to pick thimbleberries, which grew in abundant supply. On one Sunday, twelve "machines loaded with pleasure seekers made the trip" to Pu'u ka Pele, which apparently was considered an astonishing number of visitors. In addition, the paper reported that some people were still making the trip the old-fashioned way, by horse. The newspaper took advantage of the newfound popularity of Pu'u ka Pele to reiterate the great need for the county's proposed summer camps, which by 1919 had not yet been established, despite the BCAF's earlier promise.<sup>44</sup>

The sugar plantations not only served as advocates for the creation of forest reserves and camp lots, the companies continued to be involved by leasing lots and building cabins that could be used by plantation owners, managers, and employees. Over the decades, Grove Farm Company, Kekaha Sugar Company, and Līhu'e Plantation Company had cabins at Kōke'e. Employees from various Kaua'i sugar plantations also built summer homes for themselves. One area at Kōke'e apparently had so many campers and cabins associated with the Hawaiian Sugar Company in Makaweli that it became known as "Makaweli Flats," a name that was still being used in 2006.<sup>45</sup> Many of the camp site lessees continued to be from prominent Kaua'i families who owed much of their wealth and social standing to the sugar industry.

While the county worked to achieve the Pu'u ka Pele Park and camps, the Kōke'e Camps were still not fully leased. Thirty-seven ten-year permits had been leased through the end of 1920; however, seven leases were cancelled for non-payment of rent. On January 1, 1921, thirty lots of forty-seven were being leased at Kōke'e and

Halemanu. Only ten camp sites had been "substantially improved."<sup>46</sup> One of the substantial 1920 improvements must have been the completion of C. A. Rice's new mountain house, where Mrs. Rice gave a delightful tea in August. Her guests, in addition to the "Misses Rice," were Mrs. Eric Knudsen, Mrs. Frank Putman, Miss Hatch, and Miss Passmore.<sup>47</sup> Over the years, the Rice family became so well-established at the Kōke'e Camps that the lots they occupied became known as "Rice Flat."

No records were found to indicate when the Pu'u ka Pele Lots were ready for lease and development. If property tax records are accurate, some lots were laid out and houses built by about 1923-1925, with many more constructed during the 1930s. Kaua'i County installed a water system at "considerable expense" to supply campers. The new county park and camp sites must have been a success. In 1922 the Kaua'i County Board of Supervisors petitioned the BCAF for an additional 230 acres of forest reserve land for Pu'u ka Pele Park and more camp sites. The request was approved by the Governor in January 1923.<sup>48</sup>

Over the course of several decades, it became apparent that the county administration did not understand the territory's dual goals of protecting the forest and providing public access to natural areas. Colin G. Lennox, President of the BCAF, noted problems in Pu'u ka Pele County Park. First, he reprimanded the county for allowing campers to destroy forest cover and cut down trees to build their summer homes. In addition, Lennox was disturbed to learn that the land between the public road and the canyon rim was leased for private camp sites. He wanted this land to be reserved as a public park rather than private camp lots, which was in line with Judd's desire to protect the canyon area and reserve it for public use. In 1947 Lennox asked the county to not to issue more permits for the canyon rim lots and to cancel permits for lots that did not have occupied homes. When the BCAF inspected Pu'u ka Pele Park in

<sup>44</sup> "Summer Camp Site is Popular," *The Garden Island*, 17 June 1919.

<sup>45</sup> "Makaweli Flat" area is the cluster of lots, TMK 1-4-4-01 through 1-4-04-10.

<sup>46</sup> BCAF Report, *Biennium Period Ended December 31, 1920*, 43, AH.

<sup>47</sup> "Kokee Notes," *The Garden Island*, 3 Aug. 1920.

<sup>48</sup> "Puukapele and Na Pali-Kona Forest Reserves--Revised," *The Hawaiian Forester and Agriculturalist*, vol. XX (1923): 9-10, AH.



1949 Lennox discovered that his request had been ignored. Rather than canceling permits, the county had issued three new camping permits.<sup>49</sup> Within a few weeks, the county revoked the permits in question.<sup>50</sup> In 1955 the lots between the road and canyon were transferred from county jurisdiction back to the territorial BCAF.<sup>51</sup> The leases for the remaining camp lots on the canyon rim were not revoked, however, until the expiration of leases in 1985.

Kaua'i county records indicate that Pu'u ka Pele County Park was popular and successful. In 1948 sixty-three "lot owners" leased camp sites at the Pu'u ka Pele Lots. The annual rental was \$10 per lot, with each lot no larger than one acre. Permits for camp lots were ten years in duration.<sup>52</sup> By 1956 the county reported that seventy-four lots were leased; the terms and price of the leases had not changed.<sup>53</sup>

### Kōke'e Activities

As early as 1919 the Gomez Garage made regular trips up to Waimea Canyon, taking people as well as "light and heavy hauling." The garage also rented self-drive Ford automobiles for those who preferred to travel independently.<sup>54</sup> At least forty people, including six groups of tourists, visited the area during one week in 1921. As the Kōke'e area became more accessible, activities were developed and expanded for Kōke'e campers, Kaua'i residents, and visitors.

<sup>49</sup> Colin G. Lennox, letters to William Ellis, Kauai Board of Supervisors, 19 Feb. 1947 and 3 Aug. 1949, Kaua'i County Clerk.

<sup>50</sup> County Clerk, County of Kauai, letter to Colin G. Lennox, 22 Aug. 1949, Kaua'i County Clerk.

<sup>51</sup> Colin G. Lennox, letter to William Ellis, Kauai Board of Supervisors, 3 Aug. 1949; Office of County Auditor, Report to the Chairman and Board of Supervisors, 20 May 1957, 2; Kaua'i County Clerk.

<sup>52</sup> Office of County Auditor, Report to the Chairman and Board of Supervisors, 16 Mar. 1948, 2, Kaua'i County Clerk.

<sup>53</sup> Office of County Auditor, Report to the Chairman and Board of Supervisors, 24 May 1956, 3, Kaua'i County Clerk.

<sup>54</sup> Gomez Garage advertisement in *The Garden Island*, 25 Nov. 1919.

Trout fishing began as early as 1921 and was a popular annual activity during the summer months. In 1940 the territorial government received 25,520 trout eggs for Kōke'e streams from the U.S. Bureau of Fisheries. Kaua'i's fish and game warden released 250 jungle fowl for hunters' pleasure in 1939. Goat and pig hunting continued to be popular pastimes.<sup>55</sup>

Kōke'e was a beehive of activity during the 1930s, when the U.S. government built a Civilian Conservation Corps (CCC) camp near Kanaloahuluhulu. CCC boys completed a number of conservation activities, among them assisting the Territory of Hawai'i with reforestation projects, which had been one of the original goals in establishing forest reserves. CCC boys gathered tree seeds, which were then spread by "air planting" using Army planes. With the CCC's assistance, the territory attempted to reforest the eroded cliffs of Pu'u ka Pele with *haole* koa, silver wattle, koa, and ironwood. The Division of Forestry had spread various other seeds over the years, including eucalyptus, Java plum, and the New Zealand karaka.<sup>56</sup>

One of the more well-known trees to be established at Kōke'e was the Methley plum. According to cabin owner/camper Kathryn Hulme, the Methley plum was brought from South Africa to Hawai'i by Dr. Lyons of the Hawaiian Sugar Planters Association. L. W. Bryan of the Division of Forestry sent cuttings to foresters on Kaua'i about 1930. Kaua'i forester A. J. MacDonald then began planting them along Kōke'e's trails and roads, getting help from the CCC boys after 1935. The plum-planting project reportedly set out an estimated 18,000 trees in the Kōke'e area. Plum trees also became a favorite landscaping item for many cabin owners.<sup>57</sup>

The successful establishment of plum trees eventually resulted in one of Kōke'e's favorite activities, plum picking. A 1953 government

<sup>55</sup> "Trout," *The Garden Island*, 5 July 1921; "Trout Eggs to be Hatched at Kokee," *The Garden Island*, 30 April 1940; *BCAF Report, Biennium Period Ended December 31, 1940*, 44, AH; "Jungle Fowl Are Released in the Kokee Section," *The Garden Island*, 26 Sept. 1939; J. M. Lydgate, "Growing Popularity of Puu-ka-Pelee [sic] Park," *The Garden Island*, 12 April 1921.

<sup>56</sup> "Forestration [sic] Program to Continue," *The Garden Island*, 5 Oct. 1939.

<sup>57</sup> Kathryn Hulme, "Plum Crazy," *Honolulu*, Nov. 1969, 82-83, 146.

report estimated that 9,000 people visited Kōke'e to pick plums and carried out approximately seventy tons of fruit. At some point, plum picking became such a popular activity that the government implemented a 'plum season' each year, which restricted plum picking to specified dates and decreed strict limits on the amount of fruit each person could harvest from government land.<sup>58</sup>

Gardening was another popular pastime at Kōke'e. It is uncertain when the government began supplying water to the Kōke'e Camps, although a water system was provided by the County of Kaua'i to the Pu'u ka Pele Lots in the 1920s. Prior to the development of a water delivery system, gardening was usually done adjacent to streams where roses, pansies, dahlias, and other flowering ornamentals could thrive, even during the dry summer months. Larger yard areas with scattered trees were often left untended so that these areas maintained a naturalistic "wild woods" appearance. Hydrangeas were frequently planted alongside the cabins as roof runoff would keep them watered and growing. Picnicking in these various lot areas was popular.<sup>59</sup>

Although the earliest leases for the Kōke'e Camps forbid campers to import alien plants without the consent of the territorial forester, there is some indication that the Territorial Division of Forestry instead encouraged campers to help with reforestation. Supervising and approving campers' planting activities would probably have been an impossible task. Contemporary accounts report that campers were "expected" to plant fifty trees on their property, and evidence shows that campers most likely planted as they pleased. A fine example would be the blackberry, which subsequently spread throughout the Kōke'e area. Charles Rice reportedly complained to Forester Charles Judd that the plant was rapidly spreading in the forest, but the Division of Forestry refused to eradicate the pest. Over the years, blackberries as well as other alien species planted by campers became invasive pests throughout the Kōke'e forest.<sup>60</sup>

During World War II and martial law, access to the Kōke'e Camps and Pu'u ka Pele Lots was strictly limited by the U.S. military, which occupied and extensively used the Kōke'e area. Trails were closed for the duration of the war, and few campers were allowed access to their cabins. William P. Alexander, who had a cabin at Pu'u ka Pele, reported that visiting his mountain home was a problem due to gas rationing. He was one of the few lucky campers, however, as he received a special pass from the military that allowed him to visit his cabin in February 1942. Alexander's cabin log book noted that civilians were allowed to visit their mountain cabins for Independence Day in 1942; however, they needed a pass from Kaua'i's provost marshal and were required to strictly observe speed limits. In October that year the military issued Alexander a pass that was "good until revoked," which apparently allowed him to go to his cabin as he pleased.<sup>61</sup> Many Kōke'e and Pu'u ka Pele campers apparently had no such privileges.

Despite the restrictions imposed on the Kōke'e area during the war, several benefits came as a result of the military occupation. One of the more important advancements was an improved all-weather road to Kōke'e that extended to the Kalalau Lookout. Scenic spots and mountain activities became more easily accessible to the general public. The improved road influenced the BCAF's postwar program, which was to make additional improvements that would transform the Kōke'e area into a "playground to be enjoyed by many."<sup>62</sup> Cabin owner/camper John Plews also noted that surplus Jeeps available after the war made it possible for campers to use their cabins on a year-round basis. Prior to the improved road and introduction of the all-purpose jeep, campers only used their mountain cabins during the summer. Plews reminisced that campers generally closed their cabins for the winter about September of each year when the steep road to Kōke'e often became muddy and impassable. Prior to the introduction of the jeep, they could only return to their cabins after the winter rainy season had ended.<sup>63</sup>

<sup>58</sup> Kathryn Hulme, "Plum Crazy," *Honolulu*, Nov. 1969, 82-83, 146; *BCAF Report, Biennium Period Ended June 30, 1953*, 77, AH.

<sup>59</sup> John H. R. Plews, E-mail to Dawn Duensing, 1 Nov. 2002.

<sup>60</sup> John H. R. Plews letter to Dawn Duensing, 20 June 2003.

<sup>61</sup> W. P. Alexander, Cabin Log Book, 1 Feb. 1942; 4 July 1942; 16 Oct. 1942, Private Collection.

<sup>62</sup> *BCAF Report, Biennium Period Ended June 30, 1946*, 70, AH.

<sup>63</sup> John H. R. Plews, conversation with author, 11 Nov. 2002.

After the war, the improved road as well as the enactment of a territorial park system made Kōke'e more available to the average Kaua'i citizen. The Territorial Legislature authorized the Division of Territorial Parks with Act No. 185 in 1949, although it did not provide funding for the new park system until 1956. As a result, recreation-related work continued under the Division of Forestry and BCAF.<sup>64</sup> Kōke'e Park was declared the territory's first park; Waimea Canyon Park the second. The BCAF's annual report boasted that Kōke'e Park had been extensively developed since 1944 with new picnic grounds, rental cottages for short-term visitors, and camping accommodations for hunters and vacationers at the former CCC buildings. A scenic lookout had been established at Kalalau, and some forty-five miles of "excellent graded trails" were available. The report also noted that trout fishing continued to be popular. The BCAF boasted that Kōke'e Park was not only unique, but the finest upland recreation area in the Territory of Hawai'i.<sup>65</sup> A Kōke'e museum and a store/refreshment stand were established in 1953. Over the years, various associations obtained leases to lots in the Pu'u ka Pele and Kōke'e Camps, which provided additional recreational opportunities for Kaua'i families. Organizations that obtained leases included the YMCA, Seventh-Day Adventists, United Church of Christ, Boy Scouts, Hawai'i Methodist Union, and the Honpa Hongwanji Mission of Hawai'i. The YMCA had organized camps for local youth since at least 1928.<sup>66</sup>

### Water Tank Lots

*The Garden Island* announced in 1951 that twenty-seven new camp sites were available for lease at Kōke'e. Although the newspaper did not specify where the lots were located, these new camp sites were most likely what came to be known as the "Water Tank Lots." The Water Tank Lots were located adjacent to the original Kōke'e Camps. According to the newspaper, this was the first time that the

public was offered an opportunity for a block of Kōke'e camp sites since before World War II.<sup>67</sup>

The BCAF accepted applications for the new lots with a \$20 deposit and allowed prospective lessees to choose up to four lots. The new lots were all less than one acre in size, with the rental prices between \$20 and \$30 annually. The camping permits required that lessees build a summer home within eighteen months. The BCAF emphasized that it retained the right to approve all building design. As such, the BCAF required that all new summer homes meet the minimum specifications established by the board, which were intended to ensure that all buildings maintained a "rustic atmosphere" that "blended" with the landscape.<sup>68</sup> No records were located that explained the BCAF's specifications. Despite the requirement for "rustic" architecture, most buildings were built in the more modern plantation style that was common in Hawai'i.

The month following *The Garden Island's* announcement about the new lots at Kōke'e, the BCAF reported that only eighteen applications had been filed for the twenty-five (not twenty-seven as previously stated) camp sites. Permits were awarded to eight Honolulu residents and ten Kaua'i residents. A drawing for the lots was held because there was more than one application for one particular lot. The BCAF announced that the remaining lots were available, presumably on a first-come, first-served basis. When the Water Tank Lots were opened, the Kōke'e Camps had sixty-eight permit holders. The existing permits were revoked and reissued in order to be consistent with the new Water Tank permits. The major change was an increase in rental fees, which rose from \$10 annually to the \$20 to \$30 assessment being charged for the new lots.<sup>69</sup>

<sup>64</sup> BCAF Report, Biennium Period Ended June 30, 1954, 77, AH; BCAF Report, Fiscal Year July 1, 1956 - June 30, 1957, 109, AH.

<sup>65</sup> BCAF Report, Biennium Period Ended June 30, 1952, 91, AH.

<sup>66</sup> "Y.M.C.A. First Junior Camp Is Pronounced Huge Success: Kids Have Time of Their Lives," *The Garden Island*, 24 July 1928.

<sup>67</sup> "Camp Sites At Kokee To Be Available Soon; Drawings To Be Held," *The Garden Island*, 13 June 1951.

<sup>68</sup> "Camp Sites At Kokee To Be Available Soon; Drawings To Be Held," *The Garden Island*, 13 June 1951.

<sup>69</sup> "Camp Sites At Kokee To Be Available Soon; Drawings To Be Held," *The Garden Island*, 13 June 1951.

### Recreation Residences Since Statehood

After Hawai'i became a state in 1959, a state park system was created and jurisdiction over the Kōke'e Camps was transferred to the Department of Land and Natural Resources (DLNR). In 1965 the County of Kaua'i transferred its administration of the Pu'u ka Pele Lots to the DLNR. At that time, seventy-nine Pu'u ka Pele county permits were valid.<sup>70</sup>

Major changes came in the 1980s when all the camp leases expired. In 1984 the State Attorney General issued an opinion that all 121 leases for the Kōke'e area camp sites had to be awarded by means of a competitive bidding process when the leases expired at the end of 1985.<sup>71</sup> Kōke'e lessees were alarmed and feared losing their cabins in a competitive auction. According to newspaper accounts, some complained that the state had decided to auction the leases in order to enhance state revenue through higher lease amounts. State officials denied the charge, noting that the competitive auction was proper in order to give all Hawai'i residents a fair chance at obtaining a lease at Kōke'e. The Board of Land and Natural Resources (BLNR) did consider other options, including the possibility of holding a drawing. The BLNR also noted that it did not have to renew leases at all, but instead could allow the land to revert to general public use and have the buildings removed upon expiration of the leases.<sup>72</sup> In January 1985, the BLNR officially approved the plan for a public auction of 111 Kōke'e leases. Ten of the camp sites were excluded from the upcoming auction so that the land could be used for "park improvement purposes."<sup>73</sup> The ten camp sites were the lots adjacent to Waimea Canyon that Colin Lennox had wanted for public park purposes in the 1950s.

Over the course of the following months, the 120-member Kōke'e Leaseholders Association, which was organized in 1981, fought to retain their leases. The association disagreed with the attorney general's opinion that the leases had to be issued by means of a competitive bidding process. They argued that state law gave DLNR the power to directly negotiate with the current leaseholders.<sup>74</sup> Leaseholder Wayne Sakai, a Honolulu attorney, represented eighty-four leaseholders and filed a court motion to stop the auction. In June 1985, Kaua'i Circuit Judge Kei Hirano denied the motion to postpone the auction. He disagreed with Sakai's assertion that leaseholders should have the first rights to leases on the basis that they had held the leases for numerous years and made expensive improvements to the property. Hirano sympathized with the leaseholders, but refused to overturn a decision made by a state agency.<sup>75</sup>

The aftermath of the 1985 auction drastically altered the architectural landscape at Kōke'e. Fifty leaseholders lost their recreation leases. Since former leaseholders owned the buildings on their lots, they could sell them to the new leaseholders or remove them from the camp lots. Valdemar Knudsen III lost his bid on property held by his family for four generations. Knudsen dismantled and moved his structure, which was Kōke'e's oldest cabin, to Kōloa rather than sell it for a low price to the new lessee. Forty leaseholders were unable to negotiate acceptable prices for their cabins from the new leaseholders and sold their property for as little as \$3,000. Some were unable to find satisfactory solutions, and either moved or demolished their cabins. One leaseholder demolished his house when he learned that the lumber was worth more than the price the new lessee had offered.<sup>76</sup> All of the cabins located on the rim of

<sup>70</sup> Kunji Omori, letter to Hartwell K. Blake, County of Kauai Board of Supervisors, 20 July 1965, Kaua'i County Clerk.

<sup>71</sup> Stirling Morita, "New Bids Needed on Kokee Leases," *Honolulu Star-Bulletin*, 24 August 1984.

<sup>72</sup> Lester Chang, "Longtime Residents in State Park Fret Over Lease Policy," *Honolulu Star-Bulletin*, 8 October 1984; Lester Chang, "Lessees at Kokee Hoping to Retain Vacation Cabins," *Honolulu Star-Bulletin*, 8 October 1984.

<sup>73</sup> Lester Chang, "Land Board OKs Kokee Cabin Site Auction," *Honolulu Star-Bulletin*, 25 January 1985.

<sup>74</sup> Lester Chang, "Lessees at Kokee Hoping to Retain Vacation Cabins," *Honolulu Star-Bulletin*, 8 October 1984; "Kokee Park Leases Are Up for Auction," *Honolulu Star-Bulletin*, 22 July 1985.

<sup>75</sup> "Judge refuses to halt auction of Kokee leases," *Honolulu Advertiser*, 29 June 1985; "Kokee Lots Auction Won't Be Postponed," *Honolulu Star-Bulletin*, 28 June 1985.

<sup>76</sup> Ryan and Chang, "Emotions Run High at Bidding for Kokee Leases," *Honolulu Star-Bulletin*, 24 July 1985; Lester Chang, "Kokee Tenants Hurt, Angry at Loss of Mountain Retreat," *Honolulu Star-Bulletin*, 29 March 1986.

Waimea Canyon were removed as a result of those leases being eliminated from the state parks.

The twenty-year leases awarded in 1985 began in January 1986, and were extended through the end of 2007. In 2005, the DLNR Division of State Parks designated the Kōke'e Camps and Pu'u ka Pele Lots as a historic district in recognition of the high number of recreation residences that maintained historic integrity. As this report was being written, the DLNR was in the process of preparing for a lease auction to be held in October 2006.

### **SIGNIFICANCE**

The recreation residences of the Kōke'e Camps and Pu'u ka Pele Lots on Kaua'i played a unique role in Hawai'i's recreational and conservation history. The idea of summer homes in upland areas for residents wanting to escape hot coastal climates was not new in Hawai'i. Summer homes had been built in other high-elevation locales, including Olinda on Maui, Volcano on Hawai'i, and Tantalus on O'ahu. The Kōke'e Camps and Pu'u ka Pele Lots differed from other islands' summer regions as these tracts were formally planned and were built within publicly owned forest reserves. The camps, which were modeled after recreation residences built in the U.S. National Forests, were significant as they were a contemporary and local expression of a national trend. Finally, the Kōke'e tracts were also important for their association with the 1903 establishment of the forest reserve system in Hawai'i, and the idea that public lands could be used not only for conservation, but also for recreation.

Although Valdemar Knudsen's grass house and summer house are long gone, nearly 90 years after the Kōke'e Camps were created, 114 cabins remain. Approximately 75 of the structures are more than 50 years old and retain some historic integrity. The cabins' historic character is evidenced in the unpainted vertical-board or board-and-batten walls, lava-rock chimneys, and 'ōhi'a porch railings. Wood-burning water heaters are still being used to heat water at some cabins. Most, if not all, of Makaweli Flats lessees still choose to live by the light of oil lamps rather than connect to the electric grid that has been available since the 1960s. The landscape

of the rural mountain area also contributes to the overall character of the rustic cabins. Like the historic buildings and landscape, traditional recreational activities at Kōke'e continue, including plum picking and trout-fishing, both of which draw crowds from all over Hawai'i. Although the modern era and its satellite dishes have arrived in Kōke'e, the collection of vernacular rustic architecture remains to help illustrate the rich history of the only recreation residence tracts in Hawai'i.



**DEVELOPMENT OF ARCHITECTURAL STYLES**

During the earliest days of “camping” at Kōke'e, a variety of temporary and permanent camp structures were built. Valdemar Knudsen's earliest shelter at Halemanu was reportedly a Hawaiian-style thatched house. Even after the construction of Knudsen's cabin in 1868, a variety of temporary canvas shelters were built, including octagonal tents, "pup" tents, and gable-roofed tents, often using available tree branches to support the canvas walls. Earlier architectural styles continued to be utilized as well. A 1913 photograph showed a shelter with a Hawaiian thatched roof adjacent to Knudsen's tennis court.

*(insert Kauai Museum photos, thatched shelter at tennis court?)*

Early photographs also demonstrate that a vernacular style with "Kōke'e rustic" elements was well developed by 1900. Kōke'e buildings reflected the vernacular architecture common in late nineteenth-century Hawai'i, featuring small, single-wall, board-and-batten structures with post-on-pier foundations and wood shingle-covered gable roofs. Cabins were unpainted, which added to the rustic character. Six-light wood-framed sliding windows were prevalent, but multiple-light single or double-hung windows were also used. Many of the earliest Kōke'e cabins were no more than shelters and sleeping quarters. Outhouses and often kitchens were

separate facilities. Showers were built in streams. One early photograph depicted a tent kitchen.

*(museum photo of tent kitchen?)*

In addition to the common vernacular elements of the era, certain “rustic” features developed that became uniquely associated with the Kōke'e Camps. Perhaps the most conspicuous rustic feature was porch railings fashioned of 'ōhia logs and branches. Another simple element was window openings that could be covered by an awning-style wood “flap” or shutter.





light, single or double-hung windows with a few six-light sliding windows. Porches reflected typical plantation-style details, for example, 2x4 'cross' patterned rails with 4x4 posts (*photo, right*). Attic vents were more decorative as well and not limited to a simple rectangular shape (*photo, below*).



Many post-on-pier foundations utilized the readily available rocks and logs rather than cut lumber and concrete. Fireplaces and chimneys constructed of native rock added to Kōke'e's rustic charm, even though these were not unique to the area.

By the mid 1920s, summer homes were still being constructed in a "rustic-vernacular" style, but some were now displaying "plantation-style" elements that had become common in Hawai'i's plantation camps. These newer summer residences were "cottage-like" and usually larger than their earlier rustic predecessors, with several bedrooms, a parlor, kitchen, and bathroom. Cottages were still of single-wall construction, but some were built using tongue-and-groove vertical-boards rather than board and batten. A noticeable difference from the earlier rustic cabin appearance was painted exterior walls. Many of the cottages featured hipped roofs and a combination of multiple-



*A few cabins built in the "plantation style" also featured Kōke'e rustic elements, such as 'ōhia porch railings.*



Although the Vernacular Plantation Style appeared in Kōke'e about 1925, many cabins continued to be built in the Vernacular Rustic Style until the late 1950s. Generally, cabins and houses at Koke'e were vernacular in style and built using traditional materials and construction methods until the 1960s. In the 1980s, houses using modern materials, such as T1-11 siding, aluminum-framed windows, and aluminum 'patio' doors, were constructed.

### UNIQUE ARCHITECTURE AT KOKE'E

The Danford House (TMK 1-4-3-13), circa 1932, and the Hagino House (TMK 1-4-4-40), circa 1937, are exceptional for their architecture. Both houses are large in contrast to the small rustic cabins at Kōke'e. These buildings are exceptional and unique historic resources that should not be replicated.

The Danford House was built in the Tudor style and is an example of outstanding architecture. It features fine architectural details such as a Hawaiian-style double-pitched roof with flared eaves<sup>1</sup>, dormers, French doors with divided lights, and a rock chimney. The house has unusual single-hung windows. Interior highlights include an open-truss ceiling and a balcony/partial second floor of rooms. The Danford House was built by a notable Kaua'i family that had been camping at Kōke'e as early as 1907 during Knudsen's tenure on the land. The architectural form of the Danford House is remarkably similar to the Caleb E. S. Burns Residence in Līhu'e, which was designed by well-known Hawai'i architect C. W. Dickey in 1933.<sup>2</sup>

The Hagino House was built in a more vernacular style, but like the Danford House, features fine architectural details and a grander style than the average Kōke'e cabin. The Hagino House also has a Hawaiian-style double-pitched roof with flared eaves. It features large sliding windows on the front façade and a charming "Kōke'e-style" rustic porch with 'ōhia railings.

<sup>1</sup> The "Hawaiian-style double-pitched roof" is modeled on the traditional thatched roof forms found in native Hawaiian architecture. Many buildings designed by early 20<sup>th</sup>-century architects, including Hart Wood and C.W. Dickey, featured double-pitched, usually hipped, roofs with flared eaves.

<sup>2</sup> See photograph in Robert Jay, *The Architecture of Charles W. Dickey, Hawaii and California*, (Honolulu: University of Hawaii Press), 1992, 152, 153.



*The Danford House at Halemanu Camp.*



*The Hagino House, Kōke'e Camp Lots.*



**ARCHITECTURAL CHARACTER**

The Kōke'e and Waimea Canyon Recreation Residences Historic District is primarily characterized by two architectural styles: *Rustic Vernacular*, which dates from the late 1800s to circa 1960, and *Plantation Vernacular*, which appeared from approximately 1925 to 1960. Both architectural styles were based on vernacular building styles common in Hawai'i, with additional rustic features such as 'ōhia (or other tree) logs and branches that were fashioned into porch railings. Vernacular materials, such as coral stone and lava rock, were featured in fireplaces, chimneys and foundations.

**Rustic Vernacular Style**

Dating to the late 1800s when Valdemar Knudsen built his cabin at Halemanu, this architectural style followed late nineteenth-century construction styles and methods typical in Hawai'i. "Camp cabins" at Kōke'e were primarily used as shelters from inclement weather; as such, structures were small buildings comprised of several rooms used interchangeably for living and sleeping quarters.



*Typical "Rustic Vernacular" cabin; note the 'ōhia posts and railings.*

**Plantation Vernacular Style**

Appearing circa 1925, this architectural style was similar to styles in Hawaii's plantation camps and consisted of small-scale cottage-type structures. These plantation-style cottages usually featured a front lanai, several bedrooms, a parlor, kitchen, and bathroom.



*Typical "Plantation Vernacular" cabin.*

**Historic Character-Defining Features**

The significant character-defining architectural features of Kōke'e cabins include:

**Building Form, Height and Scale:**

- Rectangular in form and typically small in scale.
- Small footprint (usually less than 1,000 square feet).
- One-story height.
- Kitchens, bathrooms, and toilets were sometimes separate facilities.



**Roofs:**

- Gable roofs, either front or side orientation, are the typical roof form on *Rustic Vernacular* cabins.
- Hipped roofs predominate the later *Plantation Vernacular* cabins.
- Shingles were sometimes used to clad the gabled end of a roof.
- Original roof materials were usually wood shingle, and were often covered with “*totong*” (corrugated iron) later. Composition shingle roofs were also used at a later date.
- Roof pitch between 30° – 45°.
- Short overhanging eaves with exposed rafters and board eave sheathing.
- No gutters or downspouts.
- Roofing finishes include red or green paint, and unpainted metal that was left to weather.



*Shingled gable end.*



*‘Totong’ (corrugated metal) was often installed over the remains of the original wood-shake roofing and purlins.*







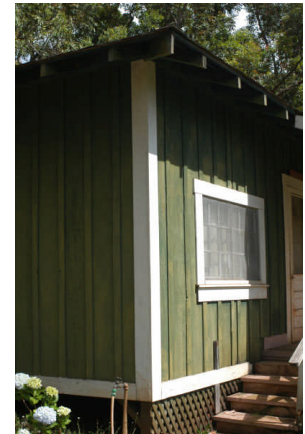
*Side gable roof.*

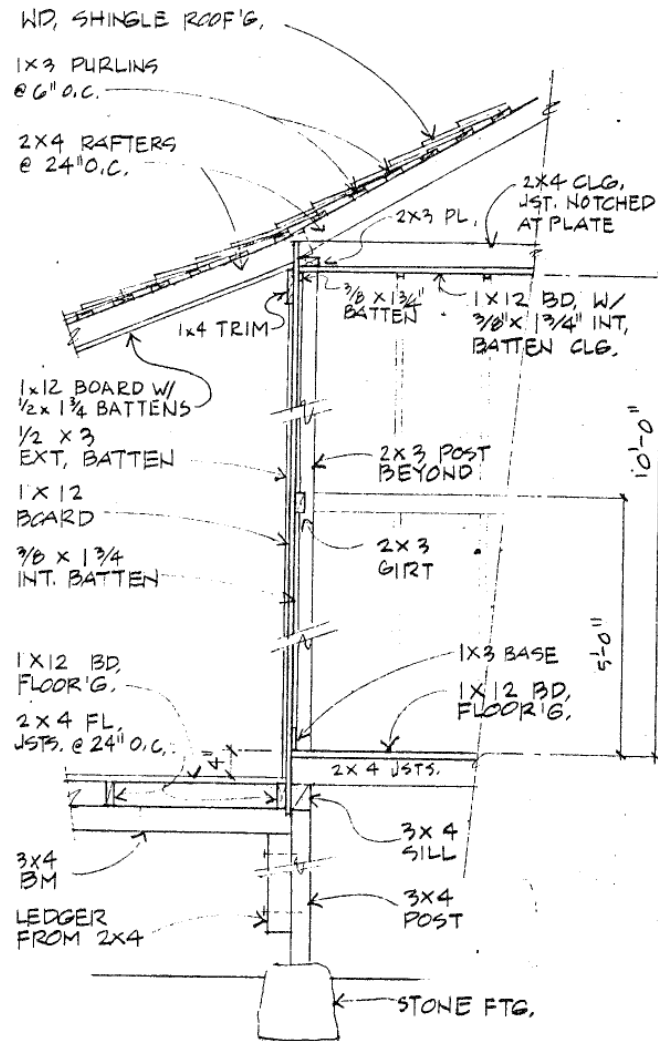


*Overhanging eaves and exposed rafter tails are character-defining features and shall be preserved.*

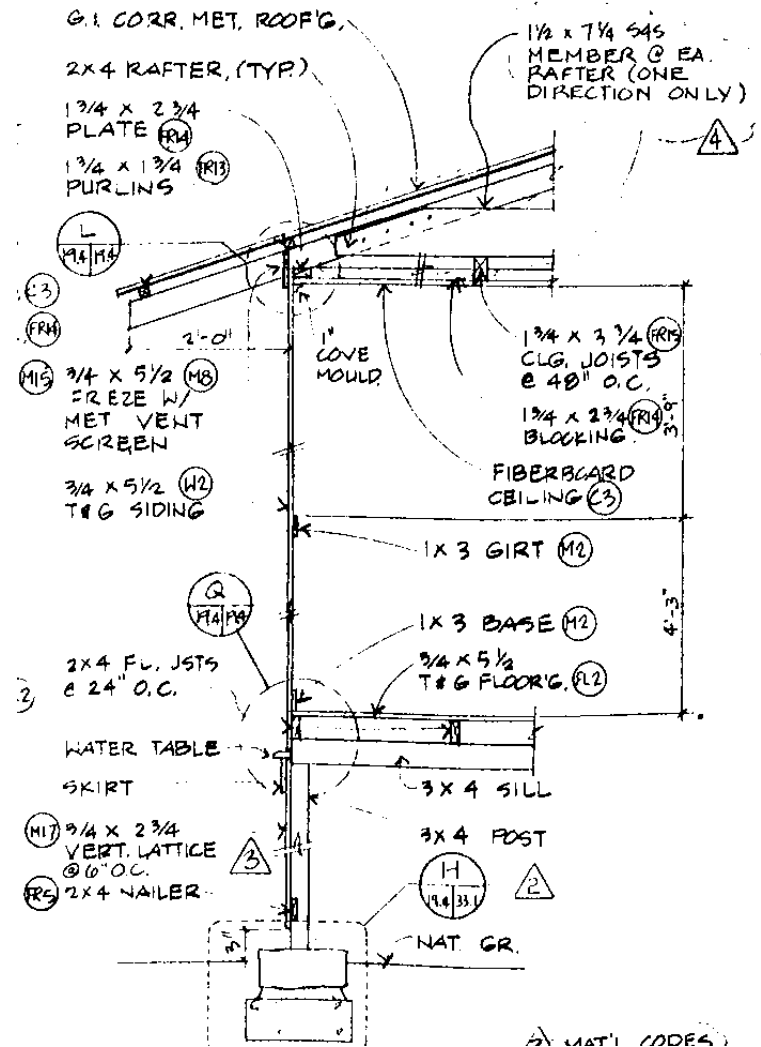
#### ***Exterior Walls and Finishes:***

- Single wall construction with Douglas fir tongue-and-groove vertical boards or board-and-batten siding.
- Board-and-batten walls, typically constructed of 1x12 boards with 3-inch wide battens.
- Tongue and groove walls, typically 1x6 S4S. Some plantation style cabins feature corner boards, watercourses, and an interior girt (horizontal bracing) at mid-height.
- *Rustic Vernacular* cabins are unpainted and left to weather to a silvery gray.
- *Plantation Vernacular* cabins were usually painted, often in “plantation” reds and greens with contrasting trim.





Architectural section through a Board and Batten Wall.

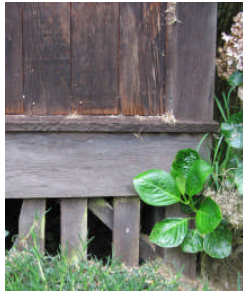


Architectural Section through Vertical Tongue &amp; Groove Board Wall



**Foundations and Framing:**

- Wood post-and-pier foundation with stone or concrete footings.
- *Rustic Vernacular* cabins utilize simple horizontal or vertical lath foundation skirts.
- *Plantation Vernacular* cabins feature more decorative lath or lattice skirts.

*Horizontal lath skirt.**Vertical lath skirt.**Stone footing.*

*Diagonal lath skirt (above left); Horizontal lath skirt (left). One cabin features a unique skirt creatively done in the rustic style (above right).*

**Windows:**

- Windows, muntins, frames, sashes, and sills were constructed of wood.
- A variety of window types were used, however six-light, sliding sash windows and multiple-light, single or double-hung windows are the most prevalent.
- Window placement was typically symmetrical, although different types of windows were used, resulting in an asymmetrical pattern.
- Window sashes are putty glazed.



*Above, these wood-framed double or single-hung windows are typical. The windows were used alone, or in pairs, and other multiple combinations.*



*Six-light sash were typically used in sliding windows (above and left), although other muntin configurations are found (below).*

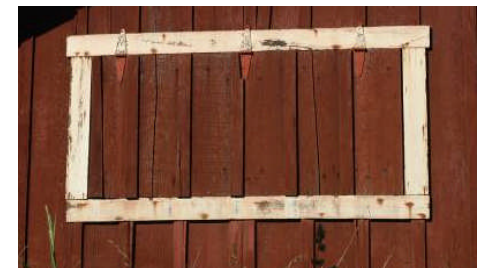


#### **Attic Vents and Shutters**

- Shutters were occasionally used to protect windows openings during the occupant's absences.



*Kōke'e's earliest buildings sometimes had window openings with awning-type shutters. The plantation-style building (below) has casement-type shutters. These historic features should be maintained.*





- *Rustic Vernacular* cabins feature louvered, rectangular-shaped attic vents built under the gable and left unpainted.
- *Plantation Vernacular* cabins feature louvered attic vents constructed in various shapes.



### Doors

- Typical door styles included:
  - Panel doors in a variety of patterns
  - Tongue-and-groove or board-and-batten doors
  - Multiple-light “French” doors
- Doors and frames were constructed of wood.
- Simple, wood-framed screen doors were sometimes used.
- Bronze or cast metal locks and knobs, some ceramic knobs. Strap hinges are common.



*A variety of paneled doors were used, including a “bible-over-cross” pattern (left) and the more common five-panel (center). Ten-light French doors were prevalent in Kōke'e and were often left unpainted.*



*A pair of unpainted board-and-batten doors is a character-defining feature on this historic Kōke'e cabin.*



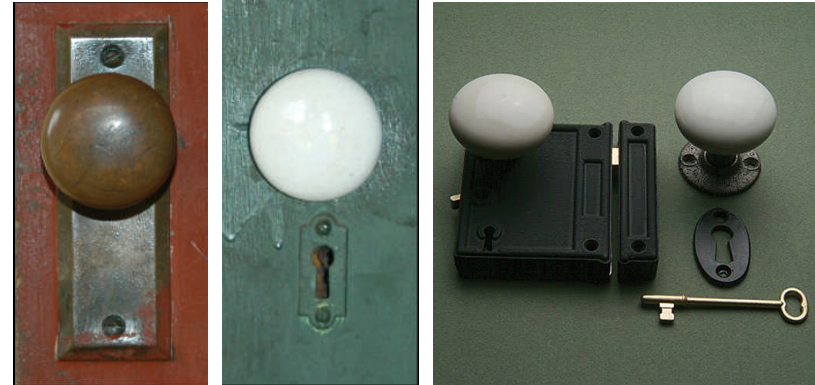
*A variety of unpainted, rustic doors were built using vertical boards. Doors were sometimes used in pairs. Although appropriate for Koke'e cabins, "dutch" doors were rare. Strap hinges were typical door hardware.*



*Ten-light "French" doors with stylistically appropriate screen doors.*

**Hardware:**

- Door hardware was "traditional" and utilitarian.
- Bronze or cast metal hardware, including mortise locks with simple roses or beveled back plate plates.
- Porcelain or cast-metal knobs.



*Left, a brass doorknob with beveled back plate; and a white porcelain knob with rosette and keyhole represent typical door hardware. Surface-mounted 'rim locks' (right) are also found on early Kōke'e cabins.*



### Lanai and Porches

*Lanai* and porches were a functional extension of the main house and served as a means to enjoy the traditional “outdoor life” popular at the Kōke'e Camps.

- Larger *lanai* and porches developed later in Kōke'e's history.
- Many of the porches in the *Vernacular “Rustic Style”* architecture were small, simple and covered with a shed roof. These simple porches that were little more than stoops were a functional extension of the main cabin and served as a means to enjoy the traditional “outdoor life” of the Kōke'e Camps. The wide doors and porches also helped to “bring the outdoors in.”



*Small porches with simple shed roofs were typical of Kōke'e's Rustic architecture.*

- Porch railings fashioned from 'ōhia or other logs and branches are a defining feature of Kōke'e's *Vernacular Rustic Style*.



- *Plantation-style* porches are generally inset or façade width with cross-patterned railings.



*Larger, façade-width porches may have been later additions to the original rustic cabins.*





*Porch railings fashioned from tree branches were a feature on pioneer Valdemar Knudsen's Halemanu cabin and become a prominent, character-defining feature of Kōke'e's Rustic Vernacular Style.*



### Covered Lanai Additions

Outdoor entertainment areas have been a feature since Kōke'e's early days when the primary activity was to spend time outdoors. Today, some of the recreation residences feature covered *lanai* or detached shelters that are reminiscent of Knudsen's earlier structures. Most of these appear to be used primarily for outdoor dining. They are appropriate in their historic use, and provide an important extension of living space during inclement or hot weather.



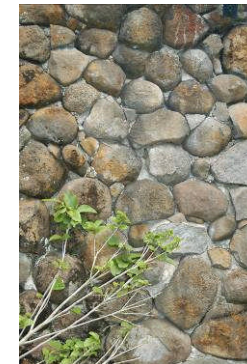
### Chimneys

- Masonry chimneys and fireplaces were prominent rustic features.
- In Hawai'i, lava rock (basalt) and coral is used for chimneys, as well as foundation piers, entry step cheekwalls, fireplaces and other decorative applications.
- Rock masonry may be cut block, rough rock, or smooth river rock.
- 

*Lava rock chimneys are a character-defining element.*



*Coral stone*



*Water-worn basalt*



*Basalt "sugar stone"*

- Historic mortar was generally quite soft, consisting primarily of lime and sand with other additives.
- Some chimneys were constructed from concrete block; others are finished with stucco over stone masonry.

- Like historic mortar, early stucco coatings were also heavily lime-based, increasing in hardness with the addition of Portland cement in the late-19th century.



*Concrete block chimney*



*Stucco on CRM chimney*

**DEVELOPMENT OF A CULTURAL LANDSCAPE**

Over the course of the last century, the forest environs of the Kōke'e Camps and Pu'u ka Pele Lots have been altered by residents into what is now recognized as a historic cultural landscape. This historic landscape reflects the physical, biological, and cultural character of the families that occupied the area. Campers brought about significant modifications to the upland forest as a result of two primary activities: clearing forest vegetation to build and enjoy recreation residences, and planting a variety of new vegetation for pleasure and/or reforestation.



Although the earliest leases for the Kōke'e Camps forbid campers to import alien plants without the consent of the territorial forester, there is some indication that the Territorial Division of Forestry instead encouraged campers to help with reforestation. Supervising and approving campers' planting activities would probably have been an impossible task. Instead, contemporary accounts report that campers were "expected" to plant fifty trees on their property, and evidence shows that campers most likely planted as they pleased.

Ancillary to the residents assisting the government with reforestation, Kōke'e campers expressed keen interest in gardening activities. Campers carefully tended ornamentals as far back as the early

1900s, when a photograph depicted Knudsen examining his rose bushes for insect pests. It is unclear when the government began supplying water to the Kōke'e Camps, although Kaua'i County furnished water to the Pu'u ka Pele Lots by the 1920s. Prior to the development of a water delivery system, gardening was usually done adjacent to streams where roses, pansies, dahlias, and other flowering ornamentals could thrive, even during the dry summer months.

Insert historic photo of Knudsen in his garden.

Not all areas were so carefully manicured. Larger yard areas with scattered trees were often left untended so that these areas maintained a naturalistic "wild woods" appearance. Picnicking in these various lot areas was popular. After the 1930s, Methley plum trees, introduced to Kōke'e by Kaua'i forester A. J. MacDonald, became a favorite landscaping item for many cabin owners. Plum trees were planted as individual specimens or in neat, carefully planned orchards. Contemporary accounts also credit the Civilian Conservation Corps activities during the Great Depression as contributing to Kōke'e's landscape by providing residents with a variety of seedlings, including California redwood, Sequoia, Eucalyptus, Sugi and Black Pine, and various fruit trees, including apple, plum, and pear.



Over time, Kōke'e residents produced a mosaic of distinctive landscapes that displayed the following general characteristics:

- Most lots were cleared from the forest and characterized by a cabin set within an open, grassy clearing for a required firebreak. Landscape improvements were minimal, with a few planted trees along the lot entry or boundary, and ornamental vegetation often limited to the cabin's perimeter.
- Dense forest often surrounded the camp lot, which provided privacy and seclusion from neighboring lots.



- Ornamental plants, especially hydrangea, were planted around the perimeter of the house where they were watered by rain runoff from the roof.
- Many cabin owners planted fruit trees, especially plums. A few lots had orderly orchards of trees planted in regular rows.
- A few cabin owners maintained a more formal, garden-style landscape, with established flower



beds, carefully groomed grassy areas, and fine specimens of trees.

- Additional site features include circulation systems such as walks, paths, driveways or roads; vegetation such as trees, shrubs, fields, or herbaceous plant material; terracing, berms, grading and fences.



*Rocks or logs were used for decorative effect, such as pathways, or borders for ornamental flower beds or tree groupings.*



*Rocks were often used for structural features such as terraces or stairs.*







*Lot entries featured 'carriage tracks' with little impact on the land as they were generally narrow dirt or grass tracks.*

- Many cabins, especially several located in the "Water Tank Lots," have scenic mountain views. On Pu'u ka Pele Ridge, several lots had ocean views or views to Ni'ihau that have since been obscured by overgrown vegetation.
- Accessory structures are also an integral part of the landscape at Kōke'e, including garages, carports, small cottages, and sheds.



### ***Fences and Gates***

- When used historically, fences were simple wood picket or rail, 'ōhia branches and twisted wire.
- Fences that define a front yard are usually low to the ground (less than 4'-0" high) and transparent in nature.



*Note: See "Design Guidelines for Sitework and Landscape" for additional guidance.*

**GUIDELINES FOR THE REPAIR AND REHABILITATION OF  
HISTORIC BUILDINGS**

The Secretary's "Standards for Rehabilitation" are ten basic principles created to help preserve the distinctive character of a historic building and its site, while allowing for reasonable change to meet new needs.

They pertain to historic buildings of all materials, construction types, sizes and occupancy. The Standards also address related landscape features and the building's site and environment, as well as adjacent, attached, or related new construction. These Standards were originally published in 1977 and revised in 1990 as part of Department of the Interior regulations (36 CFR Part 67, Historic Preservation Certifications).

***THE SECRETARY OF THE INTERIOR'S STANDARDS FOR  
REHABILITATION:***

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old design in color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken in the gentlest means possible.
8. Significant archaeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

**THE SECRETARY OF THE INTERIOR'S GUIDELINES FOR REHABILITATION:**

The Guidelines were developed to supplement the Secretary of the Interior's "Standards for Rehabilitation" by providing general design and technical recommendations. The Guidelines contain specific recommendations for elements such as roofs, windows, and other similar features. For further information, a reference list follows each section, and a glossary of architectural terms and a bibliography are included in the appendices.

***IDENTIFY, RETAIN, AND PRESERVE***

It is important to identify, retain and preserve the form and detailing of architectural materials and features that define the historic character of the building. Changes to historic buildings should be minimized, but it is recognized that changes are sometimes required to prolong the life of historic resources. In ascending order of intervention, the following general statements can be made about preserving historic buildings and structures:

***PROTECT AND MAINTAIN***

Protection generally involves the least degree of intervention and is preparatory to other work. For example, protection includes maintaining historic materials through treatments such as rust removal, caulking, limited paint removal, and re-application of protective coatings; or installation of fencing, protective plywood, alarm systems, and other temporary protective measures. These treatments should be attempted prior to undertaking more extensive work.

***REPAIR***

Repair is recommended when the physical condition of character-defining materials and features warrants additional work. Guidance for the repair of historic materials begins with the least degree of intervention possible, including such techniques as patching, piecing-in, splicing, consolidating, or otherwise

reinforcing or upgrading according to recognized preservation methods. Repair also includes the limited replacement in kind of extensively deteriorated or missing parts of features when there are surviving prototypes (e.g., steps, windows, attic vents, or stone work). Although using the same kind of material is always the preferred option, substitute material is acceptable if the form and design is consistent with the visual appearance of the original.

***REPLACE***

An entire character-defining feature may be replaced with new material if the level of deterioration or damage precludes repair (e.g., an exterior window shutter, a fireplace, or a complete porch). As with repair, the preferred option is always replacement of the entire feature in kind (i.e., with the same material). Because this approach is not always technically or economically feasible, provisions are made for the use of compatible substitute materials.

***DESIGN FOR MISSING HISTORIC FEATURES***

When an entire feature is missing (e.g., a decorative railing, or entrance door) it no longer plays a role in physically defining the historic character of the building unless it can be accurately recovered in form and detailing by historic research. If adequate historical, pictorial, and physical documentation exists so that the feature can be accurately reproduced then designing and constructing a new feature is appropriate. However, a new design that is compatible with the remaining character-defining features may also be acceptable. The new design should always take into account the size, scale, and material of the historic building itself and, most importantly, not create a false historical appearance.

***REMOVING EXISTING FEATURES FROM OTHER PERIODS***

Lessees should document materials and features dating from other periods prior to their alteration or removal. Documentation generally consists of photographs and/or drawings. Consult with the Division of State Parks or the State Historic Preservation Division prior to commencing work.

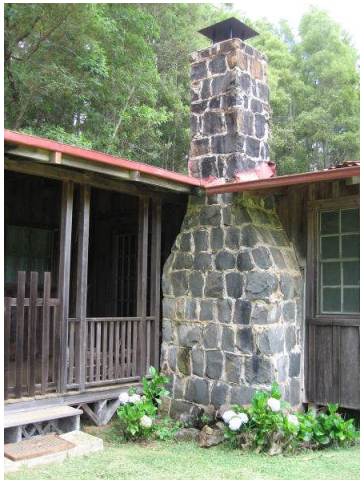


**MASONRY*****IDENTIFY, RETAIN AND PRESERVE***

Identify, retain, and preserve masonry features that are important in defining the overall historic character of the building, including chimneys, steps, and walls; and details such as tooling and bonding patterns, coatings, and color.

***PROTECT AND MAINTAIN***

- Inspect the existing condition of the masonry to identify cracked, spalling, or deteriorated masonry, and decomposed or weathered mortar. Inspections should occur on a 5-year schedule.
- Caulk the joints between masonry and siding to prevent water penetration.
- Insure that improper water drainage is not contributing to deterioration of materials or features.

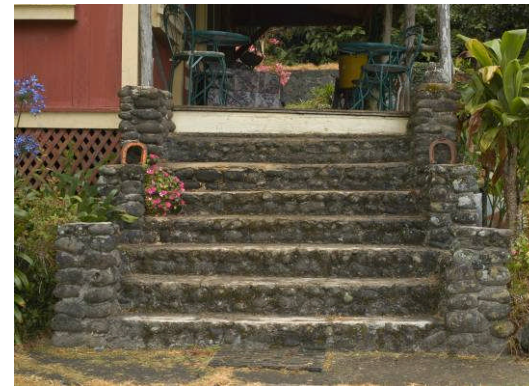


*Lava rock (left) and stucco on CRM (right) chimneys are character-defining elements and should be preserved.*

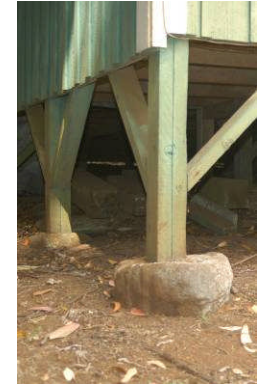
- Prevent water from gathering at the base of a wall by insuring that the ground slopes away from the wall. If there is excessive ground water, install drain tiles around the structure.
- Prevent rising damp by applying a dampproof course just above the ground level with slate or other impervious material. This type of treatment requires the advice of knowledgeable preservation architects or engineers.
- Remove climbing vines from chimneys and foundations. They trap moisture against the building and harbor destructive insects and birds.

***DO NOT:***

- Ø *Apply waterproof, water-repellent, or non-historic coatings in an effort to stop moisture problems; they often just trap moisture inside the masonry and cause more problems.*



*Lava rock entry stairs*



*Stone footing*

**Cleaning**

Masonry should be cleaned only when necessary to halt deterioration or remove heavy soiling; cleaning generally requires knowledgeable cleaning contractors. Investigate a contractor's cleaning methods, their materials, and, most importantly, inspect their previous work or check references. Look for damage caused by their cleaning such as chipped or pitted stone, washed out mortar, or a residue or film.



Whether Lessees hire professionals or clean the masonry themselves, the following guidelines should be followed:

- Clean unpainted masonry with the gentlest means possible. The best method is generally low-pressure water wash with a non-ionic detergent.
- Test cleaning materials on a small inconspicuous part of the building. Observe the test over a sufficient period of time in order to determine the gentlest cleaning method. Some old stone is too soft to clean and can be damaged by detergents and the pressure of the water.
- Prevent moss build up to help prevent the absorption of moisture. Remove moss frequently with natural bristle brush and diluted bleach solution.

**DO NOT:**

- Ø Clean with chemical methods that damage masonry or leave chemical residue on the masonry.
- Ø Use sandblasting or high-pressure water wash. These techniques can damage the masonry. Abrasively blasted brick and stone will spall (crumble) and the roughened surface will accumulate dirt and pollutants much faster than the original surface.
- Ø Needlessly clean masonry in order to attain a 'new' appearance.



### Chimney Cleaning and Maintenance

- Burn only seasoned wood. Unseasoned wood will burn less hot, resulting in more creosote buildup. Have a qualified person clean the chimney regularly of creosote buildup.
- Install a chimney cap to keep out rain and deter birds and other animals from coming down the chimney.
- Make sure the flue damper opens and closes properly.
- Use a decorative screen to keep burning embers and sparks from landing in the room.



**DO NOT:**

- Ø Use flammable liquids, such as lighter fluid, to ignite a fire.
- Ø Use the fireplace to burn telephone books, cardboard, wrapping paper, catalogs, newspaper, or Christmas trees.
- Ø Leave a fire unattended.

*Concrete block chimney  
with cap.*

For more information, contact the Chimney Safety Institute of America at 1-800-536-0118 or <http://www.csia.org>

### Painting and Waterproofing

- Use vapor-permeable, mineral-based paints specifically formulated for historic masonry only after correcting drainage problems.
- Repaint with colors that are historically appropriate to the building and to the district.

**Repainting Method:**

- 1) Remove damaged or deteriorated paint only to the next sound layer by hand scraping prior to repainting.
- 2) Clean with a low pressure water wash if the building is dirty. Allow masonry to dry out for several days before applying paint.
- 3) Prime and repaint with a breathable paint system, such as 100% acrylic latex or mineral-based paint.

**DO NOT:**

- Ø *Completely remove paint from historically painted masonry. The paint may have adhered to the masonry and breaking that bond can cause damage.*
- Ø *Paint masonry that was historically left unpainted.*
- Ø *Remove paint by sandblasting, high pressure water blasting, or caustic solutions. These methods will permanently damage the masonry.*
- Ø *Use oil-based, urethane, or epoxy paints that will trap moisture and cause spalling.*

**REPAIR**

- Damage or deterioration of structural load-bearing members should be investigated by a licensed structural engineer familiar with the Secretary of the Interior's Standards for Historic Preservation.
- Repair, stabilize, and conserve fragile masonry by using well-tested strengtheners or consolidants.
- Repair damaged masonry features by patching, piecing in, or consolidating instead of replacing an entire masonry feature. Patch stone in small areas with cementitious patching compound. Like mortar, this should be weaker than the masonry being repaired. This type of work should be done by skilled craftsmen.

- Repair stucco by removing loose material and patching with a new material that is similar in composition, colors, and texture.
- Repair cracks, not only may they be an indication of structural settling or deterioration, they may also allow moisture penetration.

*Mortar joints inappropriately sealed with caulk.***Repointing**

Masonry should be repaired by repointing the mortar joints when there is evidence of deterioration, such as disintegrating mortar, cracks, loose stone, damp walls, or damaged stucco.

Mortar in older houses is either soft (lime-based) or hard (Portland cement-based). The advantages of using lime as the binder is that it hardens so slowly that it doesn't crack and its porosity allows water vapor to escape. In the 20th century, Portland cement replaced lime as the binder. Its chief asset is that it cures quickly. Unlike lime mortars, Portland cement shrinks, doesn't let water vapor escape or permit any movement in the stone. If your stone walls were pointed with lime mortar and you repair them with Portland cement, the new mortar may cause the stone to crack or otherwise fail.

- Duplicate mortar in strength, composition, color, and texture. Match original mortar joints in width and profile.
- Determine if original mortar is lime or Portland cement based, by dabbing a little vinegar on the mortar to see if the vinegar bubbles a bit. If it does, lime is present. Portland cement will not react with the vinegar. If in doubt, repoint with a softer lime-based mortar mix. Avoid Portland cement mixes, such as "Quikrete", which may cause the masonry to fail.

**Repointing Method:**

- 1) Remove mortar to a minimum depth of 3/4 inches or to sound mortar. Hand chiseling is the preferred method.
- 2) Use a mortar mix that matched the original. Use sand that matches grain size from original mortar. Use clean, potable, neutral pH water.
- 3) The joint should be filled with successive lifts of approximately 1/4 inch of mortar. After the surface is leveled, the joint should be tooled to match the historic joint.

**DO NOT:**

- Ø *Remove mortar with electric saws or hammers, since power tools cannot be effectively controlled.*
- Ø *Repoint with a synthetic caulking compound.*
- Ø *Use a "scrub" coating technique to repair mortar instead of traditional repointing.*

**Cracked Concrete**

Cracked concrete may be caused by shrinkage, settlement, tension, inadequate rebar cover, corrosion of rebar, and temperature changes. Nonstructural and hairline cracks that show no sign of worsening normally need not be repaired.

- Repair cracks less than approximately one-sixteenth of an inch with mineral-based grout and water.
- Larger cracks should be routed (widened and deepened) minimally before patching to allow sufficient penetration of the cementitious patching compound.
- Professional consultation is recommended where noticeable cracking occurs, as this may require designing new footings, replacing major sections of the foundation, or removing and replacing deteriorated or inadequate reinforcing.

**DO NOT:**

- Ø *Undertake superficial repairs, such as caulking, that do not address underlying causes of failure and may only aggravate problems.*

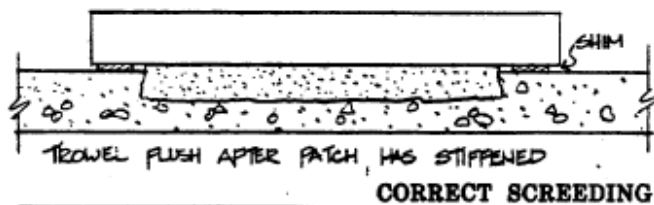
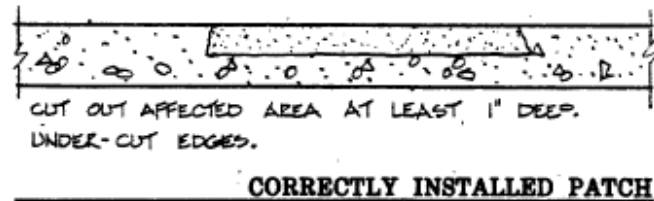
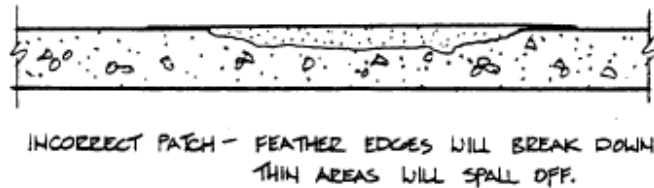
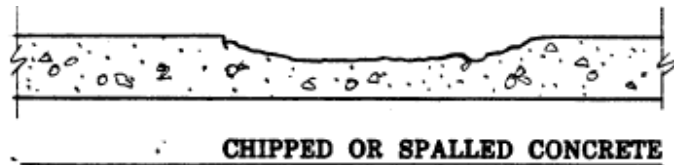
**Concrete Spall Repair**

Spalling is the loss of surface material that usually occurs when reinforcing bars corrode and create stresses within the concrete.

- Treat minor spalls and damage less than 2 inches deep with no exposed reinforcing with a pre-formulated patching compound. Deeper spalls will require more preparation.
- Major spalls include those with exposed reinforcing bar or a depth greater than 2 inches. Major repairs should be supervised by an experienced architect or structural engineer.

**Concrete Spall Repair Method:**

- 1) Sound for delamination and remove loose concrete with hand-held hammers and chisels. Cut or chip edges perpendicular to surface of concrete to a minimum depth of 1 inch (providing slightly undercut edges for anchoring).
- 2) Remove rust from exposed metal with a stiff wire brush. If more than half the circumference of any rebar is exposed, remove material from around entire circumference. Severely rusted bars must be cut out and replaced.
- 3) Clean surface with a low-pressure wash to eliminate dirt, grease, and scale. Dry thoroughly and paint steel immediately with a zinc-rich, corrosion-inhibiting primer.
- 4) Prime area with acrylic latex bonding agent.
- 5) Dry pack area with cementitious patching compound to match original finish and composition. Finish and cure. Do not feather over existing concrete.
- 6) Apply a mineral-based water-repellent. If the original surface was painted, paint the patch with 100% acrylic latex or a hybrid (silicone-modified) mineral-based coating intended for previously painted surfaces.



## REPLACEMENT

Replace extensively deteriorated or missing parts of masonry features to match the original.

- Preserve all stone, brick and original concrete. If replacement is necessary, it should match the existing masonry as closely as possible.
- Remove stone by hand chiseling. Ensure that adjacent stone is not damaged.
- Use replacement stones that are a close match to original stone in material, design, color, and texture. This stone may be salvaged from demolished structure or relocated from an area where removal has a minimal effect on the historic character of the building, or obtained from local sources.
- Match color of historic mortar as closely as possible using natural materials. Always test color by either wetting original or allowing a test sample to dry before repointing.

## Design for the Replacement of a Missing Historic Feature

- Design and install a new masonry feature, such as steps or a chimney, when the historic feature is completely missing. It may be an accurate restoration using historical, pictorial, and physical documentation; or be a new design that is compatible with the size, scale, material, and color of the historic building.

## REFERENCES

The following publications contain more detailed information about masonry. They are available from the National Park Service or at [www.cr.nps.gov/linkpubs.html](http://www.cr.nps.gov/linkpubs.html).

*Preservation Brief #1 - The Cleaning and Waterproof Coating of Masonry Buildings*

*Preservation Brief #2 - Repointing Mortar Joints in Historic Brick Buildings*

*Preservation Brief #6 - Dangers of Abrasive Cleaning to Historic Buildings*



**WOOD****IDENTIFY, RETAIN AND PRESERVE**

Identify, retain, and preserve wood features that are important in defining the overall historic character of the building. For the purposes of these Guidelines, wood includes all wood siding, shingles, decorative wood elements, and framing. The flexibility of wood has made it the most common building material throughout much of Hawai'i's building history.



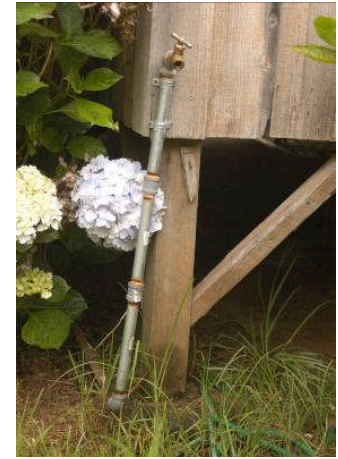
Begin with the least invasive historic-building maintenance treatment and do not take the next step unless it is necessary. Perform simple maintenance first; repair as needed; replace damaged or missing parts in-kind; replace the entire unit in-kind only if it cannot be repaired. Do not give up too soon on the idea of repairing historic wood elements.

**PROTECT AND MAINTAIN**

Inspect, evaluate, and monitor wood surfaces for signs of excessive water, rot, and pest infestation; keep all surfaces primed and painted in order to prevent wood deterioration from moisture. Peeling paint, spongy wood, discoloration, staining, and the presence of fungi are clear indicators of rotting wood and/or termite infestation.

- Remove non-original siding that has been installed over original siding. Cheap or improperly installed non-original siding may have caused deterioration of the original siding.
- Keep roofs and foundations clean of leaves and debris. Termites use these materials to build shelter tubes connecting their underground colonies to your home.

- Don't place shrubs or other plants near the foundation of your house. Don't put mulch, especially wood chip mulch, next to the house. Don't affix wooden trellises to exterior walls. Keep scrap lumber away from the house. Remove infested trees and stumps.
- If you have a leaking water spigot/faucet on the outside of your house, fix the leak. Be certain that the downspouts from the gutters drain away from the house. Be certain that the finished soil grade also drains away from the house. Avoid having a sprinkler system that splashes onto your house or a sprinkler system where the emitter heads are nearly adjacent to the outside walls of your house.
- Keep paint films and sealant joints in good condition. Check paint and flashing integrity before the rainy season.
- Apply environmentally safe chemical preservatives to wood features, including post ends at foundations, which are exposed to decay and are traditionally unpainted.

**DO NOT:**

- Ø *Store flammable materials under buildings or stairs (including firewood).*
- Ø *Remove elements, such as wood moldings, trims or other details that are important parts of historic buildings, since removing or changing them will alter the character of the structure.*





### Painting

Wood on older buildings generally has been painted with oil-based paint; therefore an oil (alkyd) primer with two coats of 100% acrylic latex paint should be used when repainting. Latex paint will not adhere to chalked oil paint. New wood can be painted with a three-coat 100% acrylic latex system.

- Clean surface with household detergent and water to allow new paint to adhere.
- Remove damaged or deteriorated paint to the next sound layer using the gentlest means possible such as hand sanding and hand scraping. Remove all paint down to the bare wood only in extreme cases where the paint has blistered and peeled to the bare wood. This condition may be only in certain places such as sills or porch rails when there is excessive paint build-up or where moisture is a problem.
- Use chemical strippers to supplement the above technique when more effective removal is required. Be certain to follow directions to thoroughly neutralize chemical strippers after use or new paint will not adhere.

#### DO NOT:

- Ø *Completely remove paint when it is soundly adhered to the wood or to achieve a natural finish.*
- Ø *Use destructive and dangerous paint removal methods such as a propane or butane torch, sandblasting or water blasting.*
- Ø *Allow wood to be in contact with chemical strippers too long so that the wood grain is raised or the surface roughened.*

### REPAIR

Because of age, vandalism, moisture and lack of maintenance, some wood features may be deteriorated beyond salvage. Every effort should be made to restore or replace damaged wood if at all possible. Don't be fooled by the poor condition of paint. In most cases, the wood underneath the layers of chipping or peeling paint is in sound condition.

- A licensed architect or structural engineer familiar with the Secretary of the Interior's Standards and Guidelines for the Treatment for Historic Buildings should investigate damage or deterioration of structural load-bearing members to determine the extent of repair necessary.



*Deteriorated post base*



*Damaged decking*

### Partially Decayed Wood:

- To test the condition of wood elements, try jabbing it with an ice pick. When pried, the wood, if decayed, will pry up in short irregular pieces. If the wood is still sound, the same procedure should result in the wood's separating in long fibrous splinters.
- Remove only damaged or decayed portions of wood features. Elements that are more than 50% decayed should be reproduced and replaced.
- If painted wood is partially decayed, it can be filled and strengthened by what is known as "consolidation." Semi-rigid clear penetrating epoxy sealer is applied and saturated into the decayed wood and allowed to harden. The consolidated wood can then be patched with a wood replacement compound and sanded in preparation for painting.
- Large damaged areas and unpainted wood may be patched with a carpenter's "Dutchman" matching the original wood's species, grain pattern and direction. Glue or epoxy in place.

Fill joints after glue dries, sand smooth, and finish to match adjacent surface.

- If the wood is just beginning to rot, dry the wood thoroughly and treat it with brush-on preservative. Waterproof the wood (two or three applications of boiled linseed oil with 24 hours drying time between coats has been quite successful) then fill any cracks and holes with putty and sand.

**DO NOT:**

- Ø *Use soft vinyl spackling ("Bondo"), auto body fillers, or latex wood fillers.*

**Termite Control**

Termites are attracted to wood and wet soil conditions, so the goal is to keep cellulose-based products away from your house and keep things dry near the house by taking the following precautions:

- Have a professional exterminator spray the soil around the building and foundations with fipronil. This treatment should be repeated every three years.
- Keep non-treated wood at least 18-inches away from soil. Keep the house and foundation dry, making sure to caulk around windows and doors. Termites thrive in moist environments.
- Watch for possible termite entry paths and try to seal them. A termite can squeeze through a 1/16-inch crack.
- Have a professional inspection done periodically, perhaps as often as once per year in a high-risk region. Amateurs seldom spot insects or damage early enough.
- Begin wood repairs only after the structure and surrounding soils are rid of the destructive insects.

**DO NOT:**

- Ø *Use creosote-based preservatives that can change the appearance of wood features.*



**Repairing Termite Damage:**

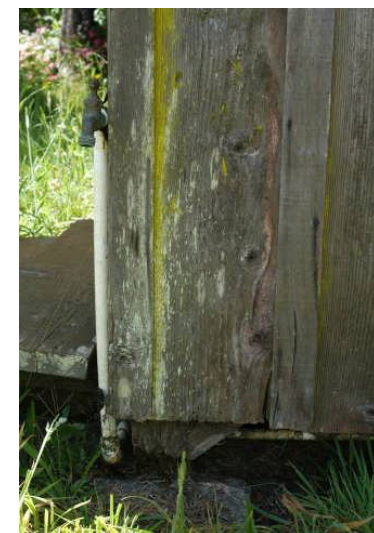
- 1) Treat wood with a brush-on preservative, such as copper naphthante (greenish; for contact with soil) or zinc naphthante (colorless; for above ground applications).
- 2) Wood damaged by beetles or other boring insects may be repaired by use of penetrating epoxy consolidant. Heavily damaged sections may be replaced with a new member matching original dimensions.
- 3) Replacement wood should be pressure-treated or of a naturally toxic species (redwood or cedar). The preferred method is to match the original species.

**CAUTION:** *Gases of fumigants are highly poisonous and may damage some types of metal, fabrics, and paint finishes; remove such items if possible.*

**Mold and Fungal Rot**

Periodically inspect sills, plates, timbers bearing on masonry, ends of trusses in roof-eaves, cornices, all joints, and around doors and windows for the presence of molds and fungal rot. End grain wood is most susceptible to damage.

- Look for peeling paint, discoloration, staining, or presence of fungi. Gently probe the surface with awl or knife point to reveal softness.
- Correct damp conditions resulting from rain, ground water, plumbing leaks, or interior condensation.



**Repair Damage from Wet-Type Fungi and Molds:**

- 1) Thoroughly dry wood and surrounding environment.
- 2) Remove decayed portion and dispose of off site.
- 3) Treat surrounding area of remaining wood with a **brush-on fungicidal preservative**.\*
- 4) Repair wood as outlined earlier in this section.

*CAUTION: Fungicidal preservatives are toxic and can be absorbed through skin. Wear rubber gloves when handling.*

**REPLACEMENT**

- Ø *If damage is too extensive, replacement of individual boards or lumber sections may be necessary. The new wood should duplicate the original in dimensions, configuration, and texture. If the material has a transparent finish or has no finish (such as with wood siding) the species of wood should be the same.*
- Ø *Replacement should be limited only to damaged areas and should not be used as an excuse for wholesale replacement. If more than 50% of an object is damaged, it may be better to reproduce the entire object in new material. For major structural systems, preservation professionals should be consulted in making this decision.*
- Ø *Replace boards that are severely warped and will not lay flat. Match size, species and surface texture of original material.*
- Ø *To reduce rust staining in the future, any new material should be fastened with hot-dipped zinc coated or stainless steel nails.*

**Replacement of Wood Siding:**

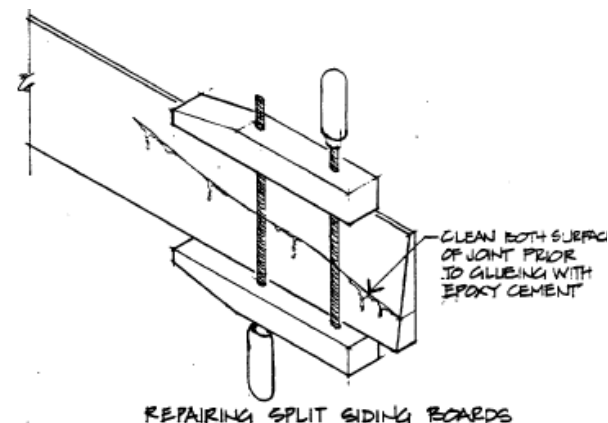
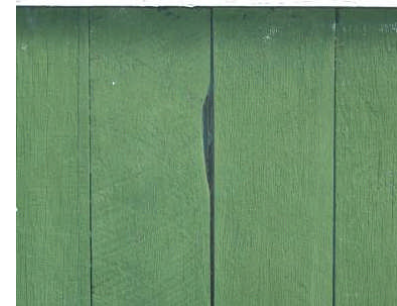
Where necessary due to deterioration, a portion of a board (or the whole board) can be removed from a wall. The siding is usually attached either by a row of nails at both the bottom and top edges. With a circular saw or hacksaw, cut out the damaged board as close as possible to the edge of the board. Remove the damaged

section of the board. The nails remaining should be cut off using a hacksaw blade (pry up the remaining boards to get to the nails, if necessary).

The new board should match the existing board in size and profile. Before installing the new board, give it a coat of primer and then preservative on all surfaces, including the back. Install the board as you would any wood trim – nail it in place, countersink the nails, putty the nail holes and any cracks and paint the boards. Use only hot-dipped zinc coated or stainless steel nails. Pre-drill nail holes at the ends of boards to reduce splitting. Countersink and putty all nails that are exposed to view.

**Warped or Split Boards:**

- If splits of sufficient size to prohibit filling with putty are apparent, the easiest method of repair is to pry the crack or split open wide enough to apply a strong exterior glue. Press the sections back together and use finishing nails to hold it in place while the glue dries.



- Larger cracks may require the removal of the board for repair. Carefully remove the split board without further damage. Clean surfaces of split and allow wood to dry thoroughly. Inject epoxy cement into split and clamp tight. When glue has set, remove clamps, sand, and reinstall.

**Wood Shingles:**

Wood shingles, like wood siding, are subject to moisture damage and decay, and like vertical board siding, must be regularly inspected and maintained to prevent these problems. Generally wood shingles will not require total replacement, and warped or loose



shingles can generally be nailed back in place. Should individual shingles need to be replaced, care should be taken to match the existing profile, shape and texture.

On new construction, or on larger areas of replacement, an easier approach may be to use a pre-nailed panelized shingle system which saves installation labor. Wooden shingles, available in a variety of shapes, are furnished mounted to a plywood backing. These panels are easy and quick to install over large areas and match the appearance of many of the original shingle profiles.

**Reduction of Member Cross Section:**

- If an intrusive element is removed and the remaining cross section of a member is adequate in strength, patch the void with tight-fitting new wood of same species, grain pattern, and texture. Glue and screw in place. Countersink and plug screw heads.
- If a structural member is overstressed, install steel reinforcement around cut-outs. If damage is extensive along full length of the member, remove and replace with new of

same dimensions, grain pattern and texture. Reroute ducting, pipes, and/or conduit. Consult a licensed structural engineer.

**DO NOT:**

- Ø *Cut, notch or drill wood members during the course of alterations or installation of mechanical, plumbing or electrical systems as it may result in the reduction of a wood members' cross-section. This can lead to overstressing of structural members and possible failure.*

**REFERENCES**

The following publication contains more detailed information about wood. It is available from the National Park Service or at [www.cr.nps.gov/linkpubs.html](http://www.cr.nps.gov/linkpubs.html).

*Preservation Brief 10 – Exterior Paint Problems on Historic Woodwork*



**WINDOWS AND DOORS*****IDENTIFY, RETAIN, AND PRESERVE***

Windows are one of the most visual aspects of a historic building and help define its particular style. Windows add light to the interior of a building, provide ventilation, and allow a visual link to the outside. Window frames and sashes in the historic district are constructed of wood.

The functional and decorative features of windows are important in defining the overall historic character of the building. These features can include frames, sash, muntins, glazing, sills, and moldings, as well as exterior shutters and awnings. Altering the windows by removing components or refitting with inappropriate elements can destroy the significance and value of the historic building.



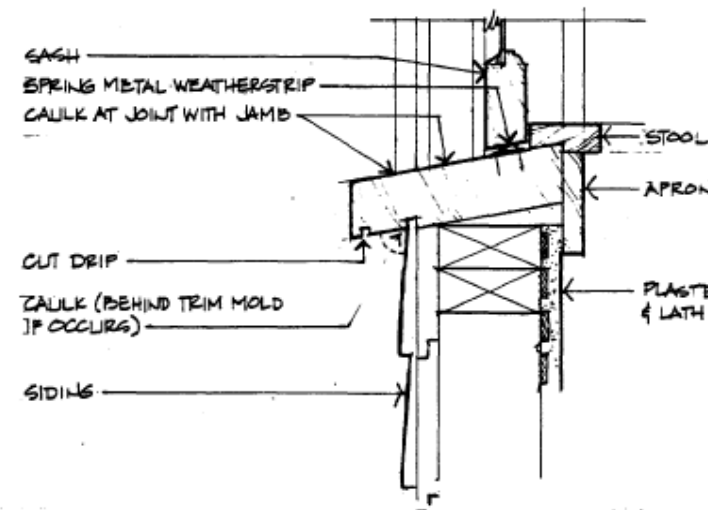
With attentive and proper maintenance and repair, original wood windows will provide energy-efficient service for the life of the building without compromise to the architectural significance of the building.

***PROTECT AND MAINTAIN***

Protect and maintain the wood that comprises the window or door frame, sash or panel, muntins, and surrounds through appropriate

surface treatments such as cleaning, limited paint removal, and re-application of protective coating systems.

- Inspect, evaluate and monitor windows and doors for signs of peeling paint, wood deterioration, open joints around frames, sound putty, and adequate caulking.
- Keep painted surfaces well painted.
- Insure that caulk and glazing putty are intact and in good condition.
- Weatherstrip doors.
- Insure that water is not forming puddles on horizontal surfaces, which may cause deterioration. Sills and thresholds should slope away from the building.
- Inspect for proper operation of hardware.



**SECTION THROUGH TYPICAL SILL**

**Screens, Awnings and Shutters**

Many of the original structures had awnings or shutters for security and weather protection. Original screens and shutters should be retained, repaired, and repainted as needed. New shutters should be sized and installed to match the actual working examples, not just nailed to the siding.



- Wood awnings and shutters should be used.
- Wood screen frames should be painted to match the color of the window trim, or left unpainted on Kōke'e's rustic cabins.
- The horizontal mullion that divides the upper and lower sash of the screen should match that of the window.

**DO NOT:**

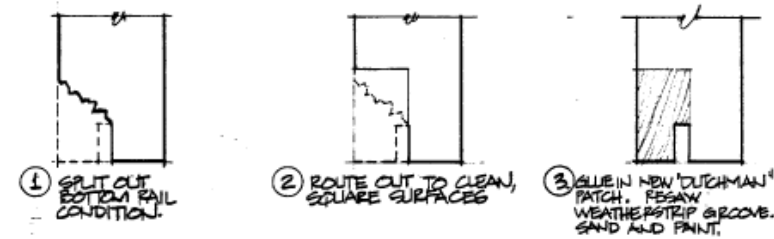
Ø Install vinyl or aluminum screen frames on historic buildings.

**REPAIR**

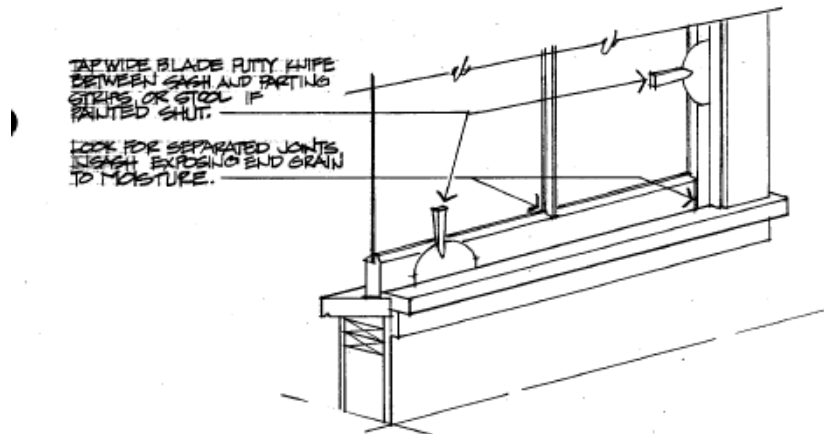
- Repair of historic windows and doors is always preferred to replacement.
- Repair original windows by patching, splicing, consolidating or otherwise reinforcing. Because of peeling paint or separation of joints, wood can appear to be in bad condition when it is in fact repairable.

**REPLACEMENT**

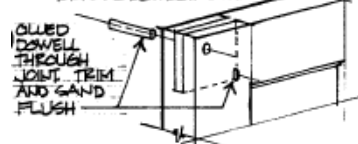
Replacing rather than restoring windows is usually an easier process and therefore more profitable. Before allowing an entire window to be replaced, it should be examined closely to see if the wood of the window is salvageable. In many cases, a little patching, painting, and weather-stripping can restore a window to its original condition.



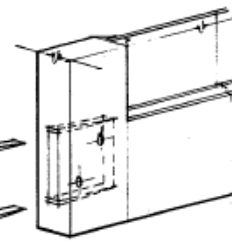
REPAIRING SPLIT-OUT BOTTOM RAIL OF SASH



WORK GLUE INTO ALL JOINT FACES AND DRIVE CLOSED BEFORE DOWELING.



REMOVE & REGLUE WEDGES



DETAIL - HALF LAP JOINT AT SASH CORNER THROUGH TENON JOINT AT SASH CORNER

- Replace in kind an entire window or door that is too deteriorated to repair using the same sash and panel configuration and other design details.
- Replacement windows and doors should be the same size and materials as the original. The window and door proportions and muntin patterns represent vital elements in the overall character of the cabin.

- If more than 50% of a sill or threshold is rotted, replace entire member with new wood of same species, grain pattern and dimensions. Remove window sash or door panel from frame before making repairs. Treat all surfaces with water repellent preservative and back prime before installing.



- Replace non-original jalousie, plate glass, and aluminum windows that detract from the historic character of the building.
- Custom-built replacement windows suitable for most early 20<sup>th</sup> century buildings may be available commercially. Good millwork shops can duplicate parts, such as muntins or bottom rails, which can be placed in the old sash.



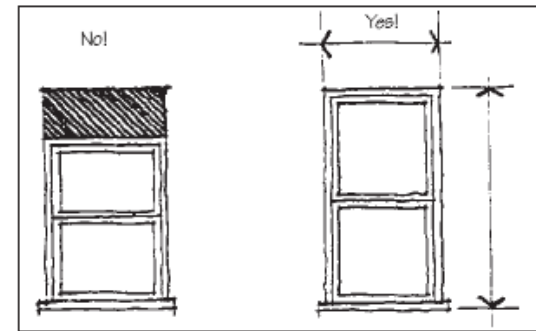
#### DO NOT:

- Ø Change the number, location, size or glazing pattern of windows or doors by cutting new openings, blocking in windows, or installing replacement sash that does not fit the historic window opening.

- Ø Change the historic and architectural appearance of windows or doors by using inappropriate materials or finishes which radically change the sash or panel, depth of reveal, muntin configuration, reflective quality or color of the glazing or the appearance of the frame.

- Ø Replace original windows or doors with stock items from building supply companies; these doors are more appropriate for new suburban dwellings than historic houses.

- Ø Block down existing openings to accommodate a smaller stock replacement window.



- Ø Alter a window or door to give an appearance that was not originally intended, such as adding sidelights and fanlights on a front entrance.

- Ø Use substitute materials such as vinyl or aluminum.

- Ø Add shutters that are the wrong size, type or material (such as vinyl) or add shutters to windows where they were not intended historically.



*Appropriate window hardware includes brass sash locks and lifts.*





### **Replace Broken or Missing Sash Cords and Pulleys:**

- 1) Remove sash to access sash weights and pulleys through removable panels in jambs close to sill or by removing interior casing. Stop and parting strip need only be removed from one side.
- 2) Remove remnants of cord from sash and weight. Old cord may be used to cut new cord to proper length.
- 3) Remove pulley. Strip off all paint in chemical stripper bath. Do not repaint. Straighten any dents, oil, and reinstall.
- 4) Feed new cord over pulley and down weight pocket by using weighted string. Tie off to weight and knot other end for insertion in sash. Cut to proper length and attach to stile.
- 5) With sash at top of window, weight should be about two inches from bottom of weight pocket.



*Replacement bronze or steel sash pulleys and pocket weights are available from period hardware suppliers.*

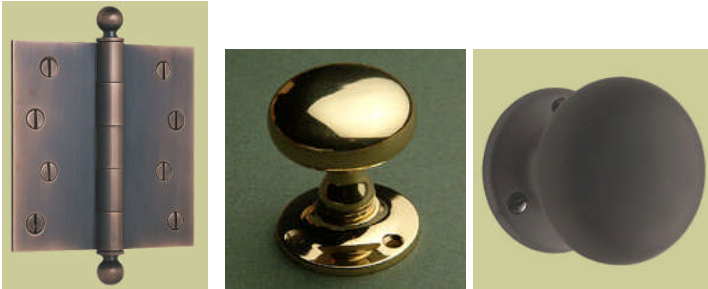
### **Finish Hardware**

- Reuse hardware and locks that are original or important to the historical evolution of the building.
- Clean hardware with non-acidic materials, and lubricate locks and hinges regularly with a household oil (such as "3-in-1").
- Replace intrusive or missing hardware with a type that is historically compatible and/or concealed.
- Select new hardware to match original in type, style, and finish.

- Install utilitarian, yet high quality, "traditional" hardware. Rustic style hardware is appropriate for the cabins.
- Hardware should be unlacquered and allowed to darken over time.
- Replate rather than replace the hardware if finish of original hardware is worn.
- Remove all non-original hardware no longer in use. Patch doors and frames as needed.



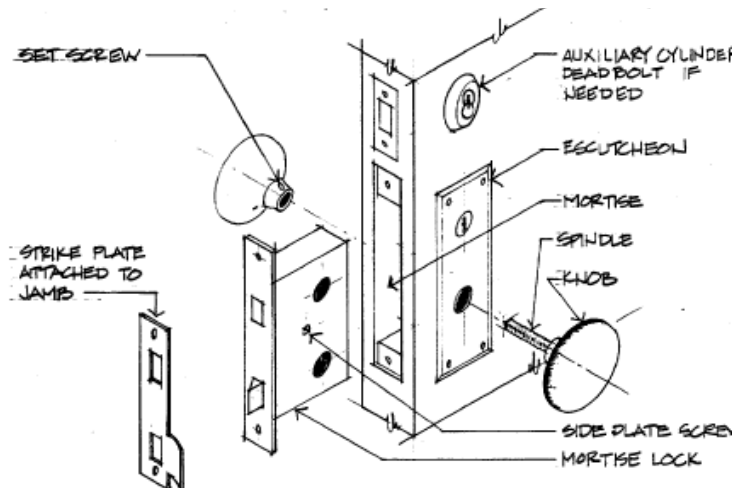
*Rejuvenation's "Putnam" brass-knob (left) and "Davis" porcelain-knob bevel-edge door sets (right).*



*Five-Knuckle Ball-Tip Loose-Pin Full-mortise Hinges are period-appropriate for 'french' and paneled doors. Rejuvenation's "Hyde" brass rosette door set (left); Crown City's "Traditional" knob/rose set (right).*

#### DO NOT:

- Ø Install elaborate or decorative hardware, including 'Victorian' or "Craftsmen" entry sets or 'crystal' knobs that are inappropriate for Kōke'e's vernacular cabins.
- Ø Use bright brass and polished chrome finishes that are inappropriate for Kōke'e's rustic style.
- Ø Paint or lacquer brass and bronze hardware.



#### Glass and Glazing

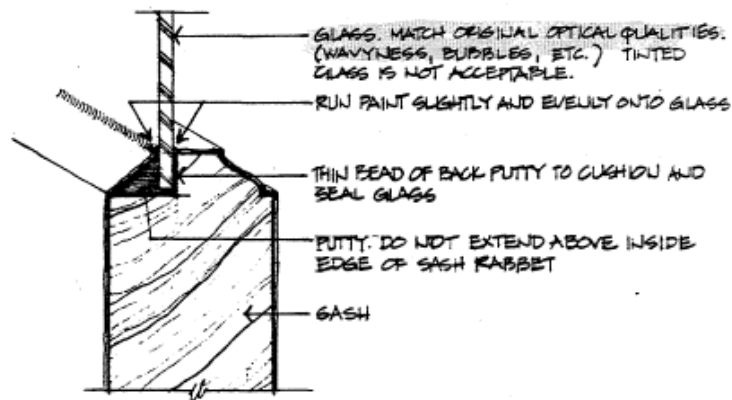
- Wash glass twice yearly.
- Inspect for loose or cracked glazing putty; remove and reinstall as described in "Repair".
- Where appropriate, improve thermal efficiency of windows insulating with a low E-glazing or colorless glass-applied film.
- Reinstall glazing that matches the original; if possible use glass salvaged from another building of the same period.
- Reglaze traditional true-divided-light windows with linseed oil putty. Do not use glazing compound.
- If sash is to be repainted, scrape all old paint off glass first. Strip sash of all built-up paint layers. Treat bare wood with paintable water repellent preservative. Prime and repaint.



*Putty glazed window sash.*

### Reglazing:

- 1) Remove old putty by hand. Hard putty may be softened by heating with a soldering iron or coating with paint stripper. Protect other panes from damage.
- 2) With all broken glass removed, clean out remainder of putty from rabbet and prime with a water repellent preservative.
- 3) A bead of linseed oil putty should be laid around the rabbet to cushion and seal the glass.
- 4) Press the pane into place and secure with glazing points.
- 5) Complete application of putty.
- 6) Paint as soon as "skin" has formed on putty (2 or 3 days).



### GLASS REPAIR

#### Energy Retrofitting

- Improve thermal efficiency with weather-stripping, caulking, and if appropriate for the building, shutters and awnings.

- Install interior storm windows with airtight gaskets, ventilating holes, and/or removable clips to insure proper maintenance and avoid condensation damage to historic windows.
- Install exterior storm windows, which do not damage or obscure the windows and frames.
- Use lightly tinted glazing on non-character defining elevations and only after other alternatives above are carried out.

#### DO NOT:

- Ø Replace original materials with vinyl or aluminum.
- Ø Replace historic multi-paned sash with new thermal sash utilizing false muntins.
- Ø Replace windows or transoms with fixed thermal glazing or permitting windows and transoms to become inoperative.

#### REFERENCES

The following publications contain more detailed information about windows. They are available from the National Park Service or at [www.cr.nps.gov/linkpubs.html](http://www.cr.nps.gov/linkpubs.html).

*Preservation Brief #3 – Conserving Energy in Historic Buildings*  
*Preservation Brief #9 - The Repair of Historic Wooden Windows*  
*Preservation Brief #10 - Exterior Paint Problems on Historic Woodwork*



**ROOFING****IDENTIFY, RETAIN AND PRESERVE**

Identify, retain, and preserve the functional and decorative features that are important in defining the overall historic character of the building. This includes the roof's shape, such as hipped or gable; decorative features, such as vents, and chimneys; and roofing material such as wood or asphalt shingles and corrugated metal, as well as its size, color, and patterning.



Historic buildings at Kōke'e generally retain their original roof form and detailing; however reroofing was often done with new materials, such as corrugated metal. Roofs have sometimes been adversely affected by the addition of new elements such as antennas, mechanical equipment, solar collectors, and satellite dishes.

**PROTECT AND MAINTAIN**

- Inspect, evaluate, and monitor roof for signs of deterioration of roofing materials, and leaks caused by deteriorated or improperly functioning flashing, gutters, and downspouts.

- Eliminate excessive moisture problems by repairing leaking roofs, gutters, and downspouts and by securing or replacing loose or deteriorated flashing.
- Clean and maintain roofs and flashings properly so that water and debris do not collect and cause damage to the roof fasteners, sheathing, and the underlying structure.
- Repair leaking roofs. Secure or replace loose or deteriorated flashing. If aluminum is used for flashing, fasten with aluminum nails and paint.
- Insure proper ventilation to prevent condensation.
- Provide adequate anchorage for the roofing material to guard against wind and water damage.
- Check seams of metal roof and keep metal surfaces painted except for copper flashings, which are protected by their own patina. Historically, unpainted roofs are the exception and should be left to weather.
- Repair historic flashing in-kind where possible. Flashing failure is a frequent cause of leaks and damage to the roof structure and the building interior, as well as to exterior masonry. Remove existing deteriorated flashing. Insert new flashing to divert water away from building materials. Counter flash, secure and caulk.

**DO NOT:**

- Ø *Change roof materials - The use of modern asphalt shingles as a replacement for a wood or metal roof can dramatically alter the historic building's overall appearance and compromise its historic integrity. While wood shingle is initially expensive to replace, it lasts longer and is, therefore, less expensive in the long term.*
- Ø *Remove historic elements - original chimneys, chimney pots, roofing, and dormers all contribute to the style and historic character of the building as well as to the visual integrity of the roof. These elements should be retained whenever possible.*
- Ø *Apply paint or other coatings to roofing material, that historically has been unpainted.*

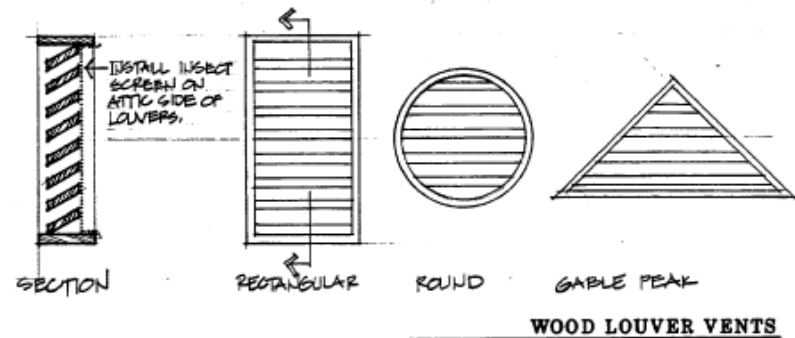
**REPAIR**

Repairs will generally include the limited replacement in kind--or with compatible substitute material--of those extensively deteriorated or missing parts of features when there are surviving prototypes such as louvers, attic vents, or wood shingles on a main roof.

- Use replacement materials that are identical to the original in color, size, finish, and reflectivity.
- Use metal fasteners in metal roofs compatible with the roofing material.
- Use high quality flashing material during repair.

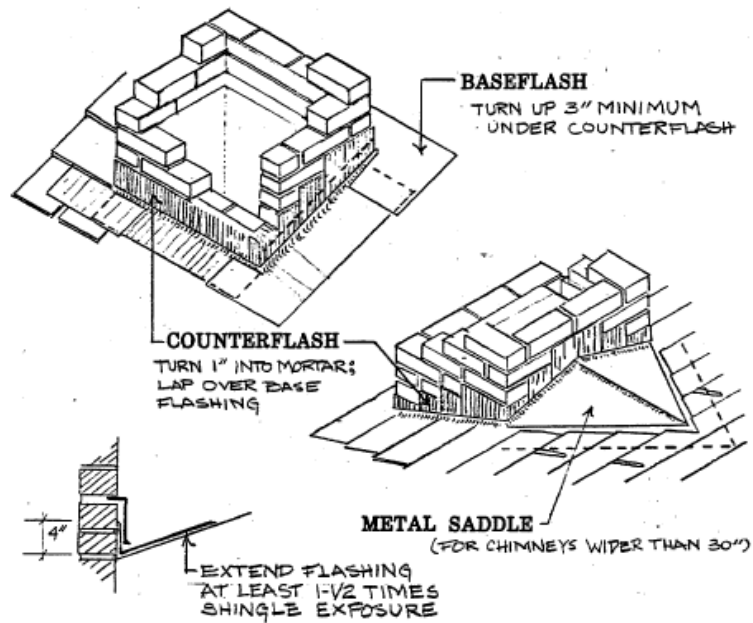
**DO NOT:**

- Ø *Use substitute materials to replace or cover original materials unless damaged or deteriorated beyond reasonable repair.*
- Ø *Use a substitute material for repair that does not convey the same visual appearance as the rest of the roof.*
- Ø *Remove original eaves and overhangs. They are important design features. Repair if possible, or replace with exact replicas.*
- Ø *Use materials that are physically or chemically incompatible, which will eventually cause deterioration or corrosion.*

**REPLACE**

- Replace in kind roof features that are too deteriorated to repair--if the overall form and detailing is still evident--using the physical evidence as a model to reproduce the feature. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered.
- Design and construct a new feature when the historic feature is completely missing, such as a chimney or vent. Complete an accurate restoration by using historical, pictorial, and physical documentation; or use a new design that is compatible with the size, scale, material, and color of the historic building.
- Install mechanical and service equipment, such as plumbing vents, transformers, or solar collectors so that they are inconspicuous from the public right-of-way and do not damage or obscure character-defining features.
- Design additions to roofs, such as covered lanais, so that they are inconspicuous from the public right-of-way and do not damage or obscure character-defining features.
- Improve thermal efficiency. Insulate all roofs by laying batt insulation in the attic or ceiling. Failure to insulate roofs will result in wasted energy.
- Buildings that were once roofed in wood shingles should be re-roofed in wood shingles to match the original. If asphalt shingles are used as a substitute, a heavy weight asphalt shingle should

be used to better imitate the wood shingle profile. Sawn wood shingles are appropriate for most building types.



#### REFERENCES

The following publication contains more detailed information about roofing. It is available from the National Park Service or at [www.cr.nps.gov/linkpubs.html](http://www.cr.nps.gov/linkpubs.html).

*Preservation Brief 04: Roofing for Historic Buildings*

*Preservation Brief 16: The Use of Substitute Materials on Historic Building Exteriors*

*Preservation Brief 39: Holding the Line: Controlling Unwanted Moisture in Historic Buildings*



**PAINT AND FINISHES*****IDENTIFY, RETAIN, AND PRESERVE***

Paint is a primary means of protecting the building envelope from the damaging effects of weather and moisture. Both latex and oil base paints are acceptable for exterior use.

Retain coatings, such as paint, that help protect the wood from moisture and ultraviolet light. Paint removal should be considered only where there is paint surface deterioration and as part of an overall maintenance program that involves repainting or applying other appropriate protective coatings.

***PROTECT AND MAINTAIN***

- Inspect painted wood surfaces to determine whether repainting is necessary or if cleaning is all that is required.
- Repaint with colors that are historically appropriate to the building and to the district.
- Historically unpainted buildings must remain unpainted. They can be maintained with a protective coating of boiled linseed oil or with a commercial wood preservative intended for unpainted surfaces.



*White wash finish with dark trim, typical on rural buildings.*



*Typical "Plantation" green.*



*Typical "Plantation" red.*

## REPAIRS

Refer to the "Masonry" and "Wood" sections in this document for specific guidelines for painting those materials.

## Cleaning

- Clean surface with strong spray of garden hose. If necessary, scrub remaining soil using a diluted laundry detergent solution (1/2 cup detergent in 1 gallon water) and a natural bristle brush. Rinse thoroughly and dry.
- Remove mildew with a solution of 3 quarts warm water, 1 quart bleach, 2/3 cup trisodium phosphate or borax, 1/2 cup detergent. Scrub with natural bristle brush, hose off, dry completely.
- Remove rust stains from metal by sanding surfacing; then prime with rust inhibitive primer and touch-up with two coats finish paint. Remove rust stains from wood by sanding nail heads; then prime, set, fill, sand and touch-up with two coats, finish paint.

## Preparation

- Repair all cracks, deterioration and moisture problems before painting, see section on "Wood".
- Use the gentlest means possible to remove loose and peeling paint to the next layer of sound paint using hand scraping and hand sanding (wood and masonry) and a wire brush (metal). A heat gun can be used on wood for heavy build up of paint where there is alligatoring and blistering.
- Use chemical strippers primarily to supplement other methods such as handscraping, handsanding and the above-recommended thermal devices. Detachable wood elements such as shutters, doors, and columns may--with the proper safeguards--be chemically dip-stripped.
- Insure that all surfaces are free of dirt, grease, and grime before painting.
- Prime surfaces if bare wood is exposed or if changing types of paints, such as from oil to latex.

- Generally, use oil-based paints on wood and metals and latex paints on masonry. In all cases, use high quality paint and follow manufacturer's specifications for preparation and application.
- A glossy or semi gloss surface will weather better and be easier to clean. A flat finish will hide marks and uneven surfaces better.

## DO NOT:

- Ø Sandblast or use high-pressure water wash to remove paint from masonry, soft metal, or wood.
- Ø Apply latex paints directly over oil-based paints as it either will not bond or will pull the old oil-based paint off of the painted surface.

*CAUTION: Lead is a health hazard. Paint manufactured before 1978 contains lead. When maintaining the paint, monitor areas of peeling paint and common friction points (windows and doors) for chipping. Prepare and repaint these areas as needed. Use drop cloths to protect the ground and collect paint chips. Be sure to limit the creation of paint dust and properly dispose of paint chips and dust. For assistance in determining proper disposal techniques, contact the State of Hawai'i Department of Health, Kauai District Health Office at (808) 241-3614.*

*Lead was used in light colors paints to provide coverage and is frequently found on sash and trim.*







*Transparent stain on wood siding.*



*Typical Plantation-vernacular paint scheme.*

### Color Selection and Placement

- Colors should be selected to complement the style and period of the house. Bright and obtrusive colors should be avoided.
- Elements of the building should be painted correctly. Trim, including horizontal and vertical trim boards, porch framing and columns, and window framing should be painted the same color. The wall, whether masonry or frame, should be a contrasting color.
- The number of colors should be limited and details, such as door surrounds or railings, should not be painted with an additional accent color.



### Wood Finishes

Wood floors, stairs and railings, and trim have great value as character-enhancing elements in most of the historic buildings in Kōke'e. 'Ō'hia rails and flooring, made from a native tree species in Hawai'i, is particularly unique and should be preserved.

- Maintain wood floors by cleaning and waxing regularly. Wear and decay can be slowed through regular maintenance. Limit wear of existing wood floors in heavily trafficked areas by covering with a reversible protective surface like carpet.
- Limit paint removal. Wood should be stripped only if it is necessary to make elements operable (such as windows), or to remove lead-containing paint.



- Repaint wood trim and walls with colors that are appropriate to the historic building. Paint layer analysis is used to determine historic colors.

*DO NOT:*

Ø *Use polyurethane finishes on wood.*

### **Canec**

Canec is a historically significant material in Hawaiʻi and should be retained because it is no longer manufactured and cannot be replaced in-kind. Canec was manufactured locally using sugar cane bagasse. Canec is difficult to repair and the compressed fiber panels made today do not entirely match the surface texture of canec.

- Canec is a relatively soft material; care should be taken to not damage the boards through accidental hitting and nicking during normal use.
- If canec boards need to be replaced, they should be replaced with another fiberboard material. Gypsum board is an acceptable substitute only if all or almost all of the canec on a surface has been destroyed.

### **Ceramic Tile**

Residential bathrooms often had architecturally significant tile work. Tiles patterns give personality to these functional spaces and contribute to the architecture's character and warmth.

- Special attention should be given to the maintenance, cleaning, and repair of these tiles. Ceramic tile can be cleaned with mild cleaning solutions, but never with abrasive cleaners. The tile should be checked periodically for loose or missing grout.
- Any tiles that become loose should be reset before they become lost or damaged.
- New tiles shall match existing. This may require custom firing tiles.

### **Asbestos**

Asbestos is a general term for a group of fibrous minerals that occur naturally in rocks and soil. Asbestos has been incorporated into thousands of building products in use in the United States since the early 1900s. Breathing asbestos fibers is known to cause several diseases that may not appear until years later. A series of EPA rules banning most asbestos-containing materials went into effect in the late 1980s. Older houses, which may also include some at Kōkeʻe, are more likely to contain asbestos.

Asbestos-containing materials are known as friable or non-friable. In friable form, the asbestos materials can be easily crumbled, broken or crushed, releasing asbestos fibers into the air. Examples of this type of asbestos are pipe wrap and acoustical ceiling tiles. Friable products can easily release fibers into the air and is most harmful when the fibers are inhaled into the lungs. There are several methods to prevent fiber release. If possible, asbestos-containing materials can be encapsulated (applying a sealant to bind the fibers together) or enclosed (installing a rigid structure around the asbestos-containing material). The third method is complete removal.

In non-friable form, asbestos fibers are bound up in another hard material. Examples of this type of asbestos are some vinyl floor tiles and vinyl sheet flooring, asbestos-cement siding and roof shingles, or roofing tar. These products seal the asbestos fibers in the material. Unless these materials are damaged by methods such as sanding, cutting, tearing, or breaking, non-friable products pose little threat.

All encapsulation or removal tasks should be performed by a properly licensed contractor. Before undertaking major renovations, consider having a properly licensed asbestos hazard evaluation specialist examine the house. The work will include a visual inspection and collection of small samples for lab analysis. Laboratory analysis is the only sure way to identify asbestos fibers. Contractors are listed in the Yellow Pages under "Asbestos." If you accidentally come into contact with asbestos-containing materials, remember: Never use power tools. Never dry sweep or

use a vacuum cleaner. Always use wet clean-up methods. Dampen materials and seal in plastic bags for disposal. Launder clothes separately.

*For more information, contact the EPA Asbestos Hotline at 1-800-368-5888 or go to <http://www.epa.gov/asbestos/ashome.html>*

## **REFERENCES**

The following publications contain more detailed information about painting and color selection. These are available from the National Park Service or at [www.cr.nps.gov/linkpubs.html](http://www.cr.nps.gov/linkpubs.html).

*Preservation Brief 06: Dangers of Abrasive Cleaning to Historic Buildings*

*Preservation Brief 10: Exterior Paint Problems on Historic Woodwork*

*Preservation Brief 28: Painting Historic Interiors*

*Preservation Brief 37: Appropriate Methods of Reducing Lead-Paint Hazards in Historic Housing*

*Preservation Brief 40: Preserving Historic Ceramic Tile Floors*

**PLUMBING*****IDENTIFY, RETAIN, AND PRESERVE***

Plumbing fixtures are utilitarian features designed to maintain sanitary living and working conditions. When porcelain wears off or fixtures become cracked, maintenance in a sanitary state becomes more difficult. Rusting and worn faucets and other trim also become maintenance problems and cause wear to other components of a plumbing system. Deteriorated plumbing fixtures may be rechromed, reporelained or replaced.

***PROTECT AND MAINTAIN***

- Prevent accelerated deterioration of mechanical systems by providing adequate ventilation of attics, crawlspaces, and cellars so that moisture problems are avoided.
- Check all main shut-off valves yearly to assure they won't rust or break off in an emergency. Tag them if they are not easily identified.
- Clean drains when sluggish to avoid clogs. Keep drain strainers in place and clean often to keep drains open.
- Clean porcelain and chrome fixtures with a non-abrasive cleaner such as Lysol Bathroom Cleaner.
- Drips should be repaired as they occur, to prevent wear to fittings and to porcelain finish.

***DO NOT:***

- Ø *Pour cooking grease down drains, which will cause them to clog.*

***REPAIR***

Although most plumbing work will probably be done by a specialized subcontractor, familiarity with older plumbing and basic repair and maintenance techniques are important to the overall maintenance of Kōke'e.

Older plumbing often utilizes cast iron soil lines, galvanized water lines and clay pipe sewer lines. Since these materials differ from what is in common use today, connections between different materials and contact corrosion between different materials are chief concerns when repairing or modifying an existing system.

- To avoid corrosion, always connect new copper pipe to old galvanized pipe with a dielectric union or a short brass nipple. No-hub couplings that consist of a neoprene sleeve with stainless steel band clamps at both ends, are available for



connections to old cast iron. A Calder coupling, which compensates for differences in pipe thickness, is available for connecting to old clay pipe.

- Cut galvanized pipe with a handsaw, cut copper with a tubing cutter. Always use dielectric unions with dissimilar metals. Never join dissimilar metals.
- If a framing member is cut during piping installation always reinforce the member with steel or plywood plates. Do not cut into historic millwork.
- When soldering, keep a spray water bottle or fire extinguisher handy.



### REPLACE

- Replace in kind--or with compatible substitute material--those visible features of mechanical systems that are either extensively deteriorated or are prototypes such as vents, grilles, or plumbing fixtures.
- When piping systems reach 60 years of age they should be scheduled for replacement. This will be more cost effective than various patches and repairs that may start a chain reaction of leaks.
- When selecting replacement fixtures it is important and most economical to specify high quality, durable products. The design of fixtures should be compatible with the substantial look of historic forms. Extremely modern or fashionable designs will soon look inappropriate in a historic setting.

- Replace cracked or worn fixtures with best quality new fixtures of compatible form and proportion. If otherwise serviceable, fixtures may be reporcelained.

### REFERENCES

*Preservation Brief 18: Rehabilitating Interiors in Historic Buildings - Identifying Character-Defining Elements.*

*National Park Service/Heritage Preservation, Inc. Caring for Your Historic House. Comprehensive guidance focusing on the importance of maintenance in the preservation of historic homes. Harry N. Abrams, Inc. 1998.*

**LIGHTING AND ELECTRICITY****IDENTIFY, RETAIN, AND PRESERVE**

The existing lighting and electrical systems in Kōke'e's recreation residences contribute to the historic character in their design and the type of lighting they provide. These guidelines augment the Secretary of Interior's standards for electrical systems, which are oriented toward preserving historic systems and incorporating new systems in historic buildings.

*Period light fixtures and parts are available from many suppliers. See "Resources".*

**PROTECT AND MAINTAIN****Building & Site Lighting**

- All original light fixtures should be preserved. Historic electrical fixtures should be cleaned and rewired to meet existing codes.
- Traditionally, exterior lights were simple in character that used incandescent lamps. These were relatively low in intensity and were shielded with simple shade devices. This tradition should be continued.
- Exterior lighting should be a subordinate element, so that the stars in the night sky are visible.
- Non-historic light fixtures should be replaced to match the original whenever possible, or should conform to the character of the building. Care should be taken to ensure that new "period" light fixtures are similar in style and era to the



architectural style of the building. It is usually better and safer to be more conservative by choosing an understated modern piece that "disappears" in its environment.

- Traditional materials such as baked enamel or porcelain, oxidized copper and cast iron should be used.
- Indirect lighting should be used whenever possible so that the light source is hidden from direct view.
- Replacement period lighting can utilize efficient fluorescent lamps as long as they are supplied with warm-colored (not the typical cool-white) lamps.

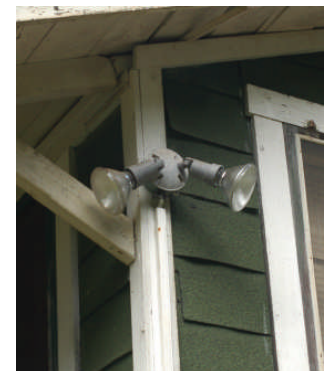


*Examples of period-appropriate exterior lanai lighting from Rejuvenation.*

**DO NOT:**

- Ø Install fluorescent strip fixtures, spot lights, flood lights, and other unshielded, high intensity light sources and those that direct light upward are inappropriate.

*Exterior flood lights should be shielded.*



**REPAIRS****Miscellaneous Electrical**

- New electrical outlets should be mounted in walls rather than in historic baseboards. Electrical device plates should match historic finishes in historic interiors.
- Conceal new wiring wherever possible. If wiring cannot be concealed, use wood surface raceways, carefully attached to avoid damaging historic materials, and painted in the same finish colors as the adjacent surfaces.
- Run the wires in the inconspicuous places, along molding edges, for instance, rather than across flat wall molding edges.
- Do not overload circuits with excessive fixtures and equipment.

**DO NOT**

Ø Deface millwork when making repairs.

**Telephone and Cable Wires**

- Wires for telephone and cable connections are often run on the surface and can look unsightly if not installed neatly. Run new wires at floor level rather than on top of baseboards.
- Clips holding the wires in place should be installed without damaging any moldings or other historic elements.

**Panel Boxes, Breakers and Meters**

- Repairs to electrical service and distribution equipment should be done by a certified electrician with experience in historic buildings.
- New equipment should be installed in areas and spaces that will require the least possible alteration to the historic structure.

**Location of Electrical Equipment**

- When it is necessary to install electrical equipment on or around the exterior of a historic building, the equipment should be placed in as unobtrusive a location as possible.

- Equipment on the ground should be located away from pedestrian entry points, preferably on less visually important sides of a building and shielded by landscaping or walls.

**DO NOT:**

Ø Place equipment on roofs unless they cannot be seen from most public vantage points.

**REPLACE**

- Electrical work should be done by a certified electrician and coordinated with finish trades.
- All conspicuously mounted conduit should be rerouted along the baseboard or concealed in corners and finished to match adjacent surfaces.

**DO NOT:**

Ø Locate service equipment on primary facades of historic buildings.

**REFERENCES**

National Park Service/Heritage Preservation, Inc. Caring for Your Historic House. Comprehensive guidance focusing on the importance of maintenance in the preservation of historic homes. Harry N. Abrams, Inc. 1998.



**NEW CONSTRUCTION****Architectural Character**

Traditionally, buildings in Kōke'e were simple in character. This is a fundamental characteristic that is vital to preserving the historic integrity of the District.

- Respect the design character of the nearby historic properties. New buildings shall be designed to blend in with, but not copy, the historic buildings. The exact copying or replication of historic styles is contrary to the Secretary of the Interior's Standards.
- New buildings shall appear simple in form and detail, in keeping with the rustic tradition of Kōke'e.
- New buildings shall be compatible with the historic and architectural character of the area while also recognized as products of their own time. It is important for a new building to use similar primary building materials.



*The new building (left) complements the character of the historic cabin.*

**DO NOT:**

- Ø *Imitate or duplicate the historic and architectural character and appearance of an earlier period.*
- Ø *Use stylistic ornamentation that confuses the history of Kōke'e. Use ornamental details with constraint, and do not copy historic details from unique or exceptional buildings.*



*Exceptional architecture: Hagino House (l); Danford House (r).*

- Ø *Construct domes, log homes, A-frames, mobile homes, and other non-traditional building types that are not consistent with the historic character of the District.*

**Building Form**

- Most historic buildings in Kōke'e have very simple rectangular forms, and new structures shall respect this design tradition. New construction shall appear similar in mass and size to historic structures. The height, width and depth of a new building shall be compatible with nearby historic buildings.
- The proportion of the facades of new buildings; e.g., the relationship of a building's width to its height, shall be similar to, and compatible with, existing adjacent buildings as seen from the street and publicly accessible areas.
- Break up the massing of larger new buildings into components that reflect this traditional size.
- Use traditional roof forms. Sloping roof forms, such as hip, gabled and shed, shall be the dominant roof shapes in residential contexts.



*Typical side gable roof with shed roofed additions.*

**DO NOT:**

- Ø Construct buildings that differ greatly from the existing pattern of simple forms and shapes, or in the relation of height to width from that of adjacent historic buildings.
- Ø Construct non-traditional roof forms. Flat roof lines are inappropriate, except on accessory structures.



*Gable roof.*



*Hipped roof.*

**Building Orientation and Siting**

The manner in which a new building, both primary and accessory structures, relates to the road is an important consideration in terms

of compatibility with its historic context. Traditional siting patterns should be respected.

- New construction shall avoid intruding upon the primary elevations of historic buildings, or be placed away from the elevations normally seen by the public.
- A new building shall be set back a similar distance from the street as those nearby historic buildings and incorporate a landscaped area that is in keeping with the District. Other alignments, such as those seen from similar eave heights, porch heights and the relative alignment of window and door moldings, are also important.
- The scale of new construction shall be less than or equal to the size of the existing historic property. A new building shall complement the general size, shape and proportions of the historic buildings.

**DO NOT:**

- Ø Vary the setback of new buildings significantly from the adjacent historic buildings.
- Ø Install landscaping that is historically inappropriate and/or blocks historic views or site lines to historic properties.

**Number of Residences**

Not more than one single-family residence shall be authorized within the Conservation District on a legal lot of record. Multiple structures may be permitted provided that there is only one kitchen (*"Kitchen" means a facility within the residential dwelling for food preparation, including fixtures, appliances or other devices to wash, prepare, heat, cook and refrigerate food and wash cooking utensils and dining implements.*)

Accessory structures shall be located behind and subordinate to the primary recreation residence.

**Minimum Lot Size**

10,000 square feet

**Minimum Building Setbacks**

For lots 10,000 square feet to one acre:

Front : 15 feet  
Sides : 15 feet  
Back : 15 feet

For lots over one acre:

Front : 25 feet  
Sides : 25 feet  
Back : 25 feet

Exceptions: Allowable building area extensions 36 inches in 15 foot setback 42 inches in 25 foot setback (e.g., eaves and decks). Site characteristics and lot shape may be a factor in adjusting minimum setbacks when so determined by the board.

**Maximum Developable Area:**

Means the total floor area in square feet allowed under the approved land use. The floor area computation shall include: all living areas under roof, including decks, garage or carport.

In addition to the MDA, additional accessory structures may be allowed. Examples include: **swimming pools, saunas, developed water features**, play courts, and other standing structures. The total area shall not exceed **2,000 square feet**.

For lots 10,000 sq. ft. to one (1) acre: **3,500 square feet**.

For lots larger than one (1) acre: **5,000 square feet**.

Exceptions: The Board may grant additional maximum developable area when requested by the applicant, with justification. The

deviation shall be limited to 15 percent. Site characteristics and the degree of pre-existing site disturbance may be a further limiting factor in the calculation of maximum developable area when so determined by the Board.

**Maximum Landscaped Area:**

For lots 10,000 sq. ft. to one (1) acre: Maximum 25 percent of the lot can be landscaped.

For lots larger than one (1) acre: Maximum 15 percent can be landscaped.

**Maximum Height Limit**

The maximum height of the building shall not exceed **twenty-five feet** measured from the highest point of the roof structure (excluding any allowed chimney, antenna, vents, or similar protrusions) down to the lower of the existing or finished grade at the lowest corner of the building.

**Foundations and Framing**

Many of Kōke'e's historic houses are of single-wall construction with post and beam on stone footings. This tradition shall be continued.

- Building foundation walls shall be compatible with similar historic buildings in the District.
- The form, materials and detailing of exposed structural members shall be similar to that of nearby historic structures.
- Stone sizes, texture and colors shall be similar to those traditionally found in the District.





**DO NOT:**

- Ø Use concrete masonry units (block), cast-in-place concrete, or earthen construction for exposed foundations.

**Exterior Walls and Finishes**

Traditionally, a limited palette of building materials - wood, stone, and metal - were used in Kōke'e. Wood, however, was the primary building material for residential structures. Accessory structures, which were usually constructed of wood or corrugated metal, were more rustic and utilitarian in character.

- New materials shall relate to those used in the District and have a simple finish, similar to those seen historically.
- Maintain the existing range of exterior wall materials found throughout the District, including board-and-batten siding, vertical tongue and groove board siding, and, in rare applications, wood shingle siding.
- Exterior wood finishes shall appear and be applied in a manner similar to those used historically. Use materials that have a demonstrated durability in this climate and have the ability to be repaired under reasonable conditions.
- Maintain protective coatings of paint or opaque stain on exterior wood siding, especially for plantation-style buildings. Colors shall be consistent with historic buildings in the District. Unfinished wood siding is appropriate for rustic-style buildings in the District.
- The size, spacing and lap dimensions of siding shall be similar to that found traditionally, (for example, 12-inch boards with 3-inch battens, or 1x 6 flush-joint tongue-and-groove boards).

**DO NOT:**

- Ø Use stucco, EIFS, concrete block, scored plywood (T1-11) or hardboard panels, vinyl or aluminum siding, as these are not consistent with the historic character of the District.
- Ø Use synthetic materials, such as cement board siding, or reflective materials, such as mirrored glass or polished metals.

**Roofs**

A limited number of roof materials are evident in the historic District. Today, the use of corrugated metal dominates. Historically wood shingles were used in Kōke'e. Roof materials and slope (pitch) on new buildings shall appear similar to those used traditionally. Typically older buildings used pitches greater than 5-in-12.

- The roofs of new buildings visible from the street and public areas shall relate in shape, pitch and materials to the roofs of existing adjacent buildings. Gable and hipped roof forms are found throughout the District.
- Corrugated metal roofs are appropriate. Metal roof materials shall be painted with traditional colors, or left unfinished to weather.
- Historic metal roofing was typically nailed directly to the rafters. The screws, bolts, and washers used today provide a sounder means of fastening the panels to the structure; however, aesthetically, the larger modern fastener heads do not match the historic appearance. The fastener size shall be as similar to the nail profile as possible.
- Asphalt shingles are inexpensive and have a relatively long life. A good quality composite (asphalt) shingle in muted colors is appropriate.
- Other shingle types, such as recycled rubber or simulated metal, while not appropriate for historic buildings, may be considered for new construction.

**DO NOT:**

- Ø Use modern metal roofing materials, such as standing seam, which do not have proportions consistent with the historic character of the District.
- Ø Use rustic wood shakes; wood shingles are historically appropriate.

**Windows, Doors and Other Openings**

- The proportion or ratio of width to height, of a new building's windows and doors shall relate to the proportions of existing adjacent buildings visible from the street and public areas.
- The rhythm of solids and voids, as well as the proportion of openings to solid planes in a new building, shall have a compatible relationship with the pattern of characteristics of existing adjacent buildings. Most of the existing historic buildings in the District have a much larger proportion of solid walls than of openings.

**DO NOT:**

- Ø Vary the proportions of window and door openings in new buildings from that of adjacent historic buildings.
- Ø Construct new buildings lacking the rhythm of solids and voids in relationship to existing patterns in the District.

**Exterior Architectural Elements**

- Entrances, porches, and other projections shall relate to the pattern of existing adjacent buildings and contribute to a consistent rhythm and continuity of features in the District.
- The architectural details and articulation of new buildings shall relate to that of existing buildings. Such details may include chimneys, railings or shutters.



*Detailed guidelines for lanai and porches are included in the section "Additions."*

**REFERENCES:**

More detailed information about building codes used in Hawai'i can be obtained from the County of Kauai, Office of the County Clerk, Council Services, 4396 Rice Street #206, Lihue, Kauai 96766.

Also see:

*Working On the Past In Local Historic Districts*, available at <http://www.cr.nps.gov/hps/workingonthepast/index.htm>

**MODEL CHECKLIST FOR NEW CONSTRUCTION AND  
ADDITIONS**

This checklist is to assist Recreation Residence Design Review Committee members in the review of proposed projects. It is intended to ensure that, to the greatest degree possible, a full review is conducted and to minimize the possibility of something "slipping through the cracks."

The Secretary of Interior's Standards discourage new construction that is a copy of a historical style. That is, new construction can be built in a contemporary manner provided it is consistent with the character of the neighborhood and respects historical styles without copying them.

To judge whether an application meets the design guidelines for the District, commission members must determine if the project supports and maintains the stated goals of the District and respects the design elements that characterize the District. The commission should first evaluate the project in terms of the larger issues of context, scale, massing, and height, followed by the details. The Commission should also consider the long-term effects that the project may have on the District.

**Architectural Character**

- ☐ Is the architectural character consistent with the neighborhood and other buildings on the lot?

**Building Form**

- ☐ Is the form of the building compatible with the neighborhood? Is the building shape consistent?
- ☐ Is the building height consistent with other buildings in the neighborhood (despite what the current zoning allows)?
- ☐ Are the facade proportions consistent with the neighborhood (are the horizontal and vertical emphases compatible)?

- ☐ Is the overall scale of the project consistent (neither too large and imposing nor underscaled and inappropriate)?

**Additions**

- ☐ Is the placement, form, and bulk of any addition consistent with the neighborhood and other buildings on the lot?

**Orientation and Siting**

- ☐ Is the setback, orientation and spacing between buildings consistent with the historic pattern in the District?
- ☐ Is the building within its allowable envelope (floor area, height)?

**Foundations and Framing**

- ☐ Is the foundation design consistent with the neighborhood?

**Exterior Walls and Finishes**

- ☐ Consistency and compatibility of materials is critical. Be sure to review all elements, including wall surfaces, foundations, and roofs. Other less obvious, but still important items include trim, gutter and downspouts, louvers and vents, lighting, and public utilities.
- ☐ Do the proposed colors conform to the color palette established for this District?

**Roof**

- ☐ Is the roof shape consistent with the neighborhood? For example, are flat roofs proposed in an area of hips and gables?
- ☐ Is the roof shape of any additions consistent or complementary to the existing building?
- ☐ Is the roof pitch (slope) compatible?
- ☐ Is the overhang and eave detailing consistent?



- ☐ Do dormers, skylights and other appurtenances exist elsewhere in the District? Are they sensitively designed for this project?
- ☐ Are chimneys designed to be consistent with others in the District?

**Windows**

- ☐ Is the window type or style consistent (double-hung, sliding, casement, etc.)?
- ☐ Are the shape and proportions of the windows compatible?
- ☐ Is the rhythm and balance of the window pattern complementary to the District?
- ☐ Are the shutters or other shade structures consistent with the District?

**Doorways**

- ☐ Is the placement and orientation of the door consistent with the District? For example, is the door placed to the side of the building when the historic pattern is on the front?
- ☐ Is the type of door and hardware consistent?

**Exterior Architectural Elements**

- ☐ Are door platforms and steps consistent with the District?
- ☐ Are porches and decks used and treated in a manner consistent with the area?
- ☐ Do any architectural elements block or obscure historic elements?

**Accessory Structures**

- ☐ Is the carport or garage located appropriately?

**Landscape**

- ☐ Is there an effort to preserve mature trees?
- ☐ Is the proposed landscape consistent with the District?

**Site improvements**

- ☐ Are walkways consistent with the historic pattern?
- ☐ Are driveways cut in such a way that they do not hamper historic resources?
- ☐ Are retaining walls of the same or similar material and height as the historic pattern?
- ☐ Do fences obscure the historic resource?
- ☐ Are fence materials historically consistent?

**GUIDELINES FOR ADDITIONS TO EXISTING BUILDINGS**

This chapter presents design standards and guidelines for the treatment of existing additions to historic properties and the design of new ones. The construction of an exterior addition to a historic building may appear to be essential for the new use, but the guidelines emphasize that such new additions should be avoided and considered only after it is determined that those needs cannot be met by altering interior spaces.

**Standards for Additions**      Attempt to accommodate needed functions within the existing structure without building an addition.

- Respect the existing historic character of surrounding buildings in the District and insure that the new addition will complement this historic character.
- Respect the scale, massing, materials, and window spacing of the historic building, but do not attempt to duplicate form, material, and style, so that the addition is sensitive to the historic building.
- Design new additions as separate, but connected, structures.
- Place new additions, such as balconies, decks, exterior stairs and greenhouses on the rear or inconspicuous sides of the building.
- Construct a new addition so that character-defining features are not radically changed, obscured, damaged, or destroyed in the process of rehabilitation.
- New additions may be contemporary or may reference design motifs from the historic building. In either case, they should always be clearly differentiated from the historic building and be compatible in terms of mass, materials, relationship of solids to voids, and color.

**DO NOT:**

- Ø *Use the same wall plane, roofline, or materials that may make the addition appear original to the historic building.*



*This lanai addition is a separate, but connected, structure and utilizes details and materials from the original structure.*

**EXISTING ADDITIONS**

An early addition typically used forms and materials that were similar to the main building and it remained subordinate in scale and character. The height of the addition was usually positioned below that of the main structure, and it was often located to the side or rear, such that the primary facade remained predominate.



- Preserve an older addition that has achieved historic significance (i.e., at least fifty years old) in its own right and should be respected. An early addition to a building may be evidence of the history of the structure, its inhabitants and its neighborhood.
- More recent additions that are not historically significant (i.e., less than fifty years old) or structures that are not compatible with the historic building may be removed.

**NEW ADDITIONS**

When planning an addition, consider the impact the new structure will have on the historic building. The loss of the historic fabric should always be minimized. A design for a new addition that would create an appearance inconsistent with the historic character of the building

is inappropriate. The new work should be recognized as a product of its own time and be visually compatible with the original.



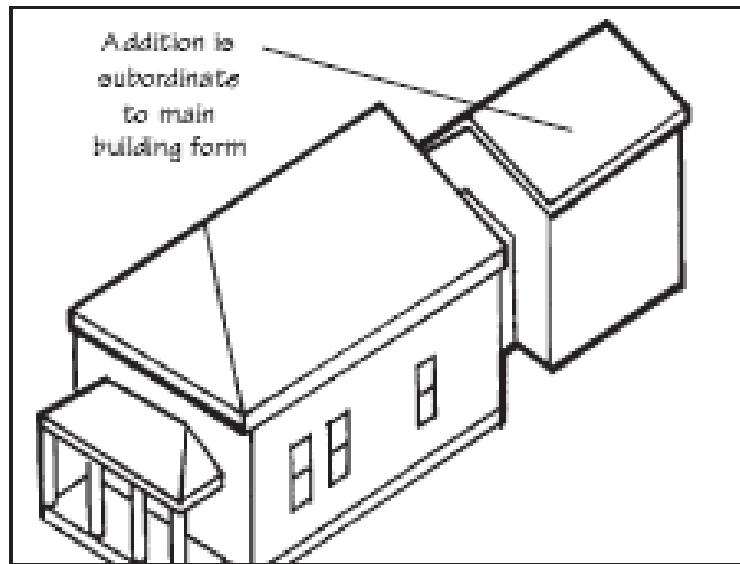
*Lanai addition in character with existing building.*

- Additions shall not obscure or damage character-defining features (such as windows, doors, porches, brackets or roof lines).
- Additions shall be visually subordinate to the main building.
- An addition shall respect the proportions, massing and siting of the historic building. Set an addition back from the primary facade in order to allow the original proportions, form and overall character of the historic building to remain prominent.
- The form and detailing of an addition shall be compatible with the historic building. Simpler details on an addition can help distinguish it from the original structure.
- A substantial addition shall be distinguishable from the historic building so it can be understood as a more recent change. This can be accomplished with a jog in the wall planes, or by using a corner board to define the connection, or a subtle change in



material, or a subtle differentiation between historic and more current styles.

- A small connector linking the historic building and the addition may be considered.



*Design an addition such that it will not obscure, alter or destroy the character of the original building.*

- 
- The materials of an addition shall be compatible with those of the primary structure. Matching the historic material is an appropriate approach, although new materials also may be considered.
- Windows in an addition that are visible from the public way shall be compatible with those of the historic structure.

#### DO NOT:

- Ø *Create additions that imply an earlier or later period than that of the building or convey an inaccurate variation on the historic style. For example, adding ornate "Victorian" details to a simple Kōke'e cabin would not be appropriate.*

#### Roof Additions

- A roof addition shall be in character with the style of the primary structure.
- The size of a roof addition, including dormers, shall be kept to a minimum and should be set back from the primary facade so that the original roof line and form is seen from the street.



*This lanai addition is appropriately located on the rear elevation and utilizes materials similar to the original structure.*

#### Covered Lanai Additions

Outdoor entertainment areas have been a feature at Kōke'e since Knudsen's early days camping at Halemanu, when the primary activity in Kōke'e was to spend time outdoors. In the early 1900s, Knudsen's tennis court featured a thatched-roof shelter.



*Covered lanai addition.*

Today, some of Kōke'e's recreation residences feature covered lanai or detached shelters that are reminiscent of Knudsen's earlier structures. Some Kōke'e cabin owners have also transformed carports into outdoor living areas. Most of these structures appear to be used primarily for outdoor dining. In any case, they are appropriate in their historic use, and provide an important extension of living space during inclement or hot weather.

- Covered shelters may be constructed in yard areas away from the main structure.
- Shelters should be rustic and utilitarian in appearance.

**DO NOT:**

- Ø *Add covered lanai additions to primary facades.*
- Ø *Enclose porches, since this changes the historic character of the building.*



### Modern Conveniences and Code Requirements

Careful consideration should be given to the design and placement of modern conveniences and to changes required by building codes on and around historic buildings. Careful consideration shall be given to changes required by building codes and to the design and placement of modern conveniences on and around historic buildings. Such items include dish antennae, external water heaters, utility meters, trash container storage, utility wires, and ramps for the handicapped.

- Retain plant materials, trees, and landscape features to perform passive solar energy functions, such as sun shading and wind breaks.
- Install freestanding dish antennae in an inconspicuous manner so as not to detract from the property's historic character.
- Screen trash containers, external mechanical equipment, and utility meters with landscaping or a screen constructed to blend with the building.
- Comply with all health and safety codes in such a manner that character-defining features and finishes are least affected.

**DO NOT:**

- Ø *Place dish antennae or other modern conveniences on conspicuous roof areas or near the roadway as to detract from the historic character of the building and the District as a whole.*

### REFERENCES

More detailed information about building codes used in Hawai'i can be obtained from the County of Kauai, Office of the County Clerk, Council Services, 4396 Rice Street #206, Lihue, Kauai 96766.

The following publication contains more detailed information about new additions to historic buildings. It is available from the National Park Service or at [www.cr.nps.gov/linkpubs.html](http://www.cr.nps.gov/linkpubs.html).

*Preservation Brief 14 – New Exterior Additions to Historic Buildings: Preservation Concerns*

**SITEWORK AND LANDSCAPING*****IDENTIFY, RETAIN AND PRESERVE***

Identify, retain, and preserve buildings and site features that are important in defining a property's overall historic character. Site features may include circulation systems such as walks, paths, roads, or parking; vegetation such as trees, shrubs, fields, or herbaceous plant material; landforms such as terracing, berms or grading; fences and decorative elements; adjacent open space such as fields or woodlands, and important views or visual relationships. Retain the historic relationship between buildings and landscape features of the setting.



This chapter presents design guidelines for the treatment of site features. These include landscape elements, as well as parking and driveways. Many of the design principles set forth in this chapter address considerations of buffering incompatible or visually obtrusive features and coordinating, or linking desired circulation systems. Others promote design that would be compatible with historic landscape traditions, while also accommodating changing uses and needs.

***PROTECT AND MAINTAIN***

Historic landscapes present a difficult planning problem in a district. Unlike buildings, which may be repaired, plants mature and die, or, in cases of neglect, become too overgrown for pruning. Proper maintenance includes replacement of plant materials and trees with similar varieties that are in keeping with the character of the original planting scheme.

***REPAIR***

Repair will also generally include the replacement in kind--or with a compatible substitute material--of those extensively deteriorated or missing parts of features when there are surviving prototypes, such as lanai railings or paving materials.

***REPLACE******Landscaping & Plant Materials***

- Preserve important landscape features with regular ongoing maintenance of historic plant material. Existing on-site vegetation shall be retained whenever possible.
- Existing historic site features, such as fences, pathways and trees, shall be preserved, and shall be protected during construction.
- Lack of periodic maintenance can cause serious damage to buildings, including deterioration of foundations from extensive root systems, physical damage from landscape against building elements, and moisture problems to building fabric.
- Ground surfaces shall slope away from building foundations to reduce the amount of groundwater immediately next to foundations. Constant moisture against foundations will cause deterioration.
- Keep dense plant growth away from wood exteriors. Allow at least 3 feet between wood siding and hedges. Prune overhanging branches of trees so they are kept 3 feet away from roof eaves.
- Minimize disturbance of terrain around buildings or elsewhere on the site, thus reducing the possibility of destroying or damaging important landscape features or archeological resources.
- Plants and lawns shall be fertilized on at least an annual basis.
- Evaluate the overall condition of the materials and features of the property to determine whether more than protection and maintenance are required, that is, if repairs to building and site features will be necessary.





- In new landscape designs, use plant materials that are compatible with the historic context and climate of Kōke'e (refer to "Development of a Cultural Landscape" in Chapter 3). Existing, native landscaping shall be incorporated into the final landscape.
- In many cases, trees and shrubs adjacent to buildings have become too overgrown for effective pruning. Replacement in-kind is probably necessary, followed by an annual pinching-back and light pruning.
- Use plant materials in quantities and sizes that will have a significant impact in the early years of a project.
- Replace dead or dying plantings in-kind or in accordance with a developed comprehensive landscape plan. If diseased, evaluate the nature of the problem; if it is a pervasive disease substitute a non-susceptible variant that has a similar appearance to the original.
- Replacement plant materials shall be similar in size or equivalent massing to the plants removed (e.g., a cluster of smaller new trees may be used to establish a massing similar to one large original tree)

- If planting is incidental, remove it. If it adheres to historic planting arrangement, replace in kind or in accordance with a comprehensive landscape plan.
- If a tree is too close to a building, replace it in kind but relocate its position to allow for adequate clearance from the structure.

### Incipient Invasive Species

Incipient species are alien plants that have not yet become established, but that pose a significant threat due to their aggressiveness, rapid rate of dispersal, and characteristics of killing off, crowding out, or otherwise displacing native vegetation. These plants have a good potential for being eliminated from sensitive areas, thus often are priority plants for eradication efforts and are NOT RECOMMENDED for new plantings. They include:

- Ø Australian Tree Fern (*Cibotium chamissoi*)
- Ø Chinese Privet (*Ligustrum sinense*, Oleaceae)
- Ø Firethorn (*Pyracantha angustifolia*)
- Ø Glory Bush (*Tibouchina urvilleana*)
- Ø Tree Privet (*Ligustrum lucidum*, Oleaceae)

### Established Invasive Species

Established species are alien plants that have become naturalized in the environment, even to the point of becoming emblematic of Hawai'i (e.g., ginger). In many areas they compose the majority of the vegetation type, and no reasonable potential for eradication exists. These plants do pose a significant threat in areas of primarily native vegetation. Control efforts for these plants focus on containment and removal from native-dominant vegetation areas.

Established species in the two parks includes:

- Australian Blackwood (*Acacia melanoxylon*)
- Banana Poka (*Passiflora mollissima*)
- Blackberry (*Rubus fruticosus*)
- Black Wattle (*Acacia mearnsii*)
- Bush Beardgrass (*Schizachyrium condensatum*)

- Fire Tree (*Myrica fayii*)
- Honeysuckle (*Lonicera japonica*)
- Ginger - Kahili (*Hedychium gardnerianum*)
- Ginger - White (*Hedychium coronarium*)
- Ginger - Yellow (*Hedychium flavescens*)
- Koa Haole (*Leucaena leucocephala*)
- Lantana (*Lantana camara*)
- Molasses Grass (*Melinis minutiflora*)
- Strawberry Guava (*Psidium cattleianum*)

The introduction of non-native, invasive plant species poses the greatest impact to the native forest. Unintentional and intentional introductions have created situations where eradication may be currently out of the question, such as in the case of blackberry (*Rubus fruticosus*) and banana poka (*Passiflora mollissima*). In these instances, controlling the spread should be undertaken by manual removal, herbicide, and biological controls, including control of seed carriers, such as pigs.

Long-term plant species management should include the removal of all non-native species. This work can be done incrementally as the trees become diseased or are damaged through natural causes.

### Views

Views to natural and historic features abound in Kōke'e and contribute to its unique setting. These view corridors shall be respected.

- Preserve views to significant features from the public way.
- Landscaping is encouraged and, in some situations, may be required in order to mitigate the visual impact of the roadway or new structures. Such landscaping, when mature, shall maintain existing views and solar access corridors.
- Site plans for new construction shall retain existing view corridors. Sloped roofs allow views along the side yard of a property. Such design elements are encouraged as methods of preserving view corridors.

### Site Retaining Walls

- Stone retaining walls are used in some areas where steep slopes occur. Many of these have historic significance and shall be preserved. Replace only those portions that are deteriorated beyond repair. Any replacement materials shall match the original in color, texture, size and finish.
- Maintain the historic height, form and detailing of a retaining wall. Increasing the height of a wall to create a privacy screen is inappropriate. If additional screening is necessary, add planting materials or a fence. It is important, however, that views of historic features shall not be screened from public view.
- Reduce water pressure on a retaining wall by improving drainage behind it. Also provide drains in the wall to allow moisture to pass through it.



- Minimize the perceived scale and mass of a new retaining wall. Walls less than four feet are encouraged. Where the overall retaining height must be greater than four feet, use a series of terraces with short walls to maintain the traditional sense of a hillside where feasible.
- For a new retaining wall, use materials similar to those seen historically. Natural rock or stone shall be used for a new retaining wall. Architectural block, with special texturing or color may be considered where it can be demonstrated that the result will appear to be in character with the area.

**DO NOT:**

- Ø *Introduce mortar into dry-stack retaining walls.*
- Ø *Paint a historic masonry retaining wall, or covering it with stucco or other cementitious coatings, is not appropriate.*
- Ø *Use conventional unfinished concrete block.*

**Cut-and-Fill**

Site development may require cutting new driveways into relatively steep slopes along with substantial excavations for foundations.

While basic engineering concerns are major issues in these cases, the visual impacts of these cuts can be significant.

- Use earth berms, rock forms or stone retaining walls to minimize visual impacts of cut-and-filled sloping areas. Hedges and fences may also be appropriate in some locations.
- Simple rock walls that use native stone are encouraged.
- Recontour surrounding landscapes and slope beds to drain away from buildings. If this is not possible, install a french drain to intercept groundwater.

**DO NOT:**

- Ø *Use exposed gabions; large, continuous surfaces of smooth, raw concrete; and other similar structures.*

**Fences and Gates**

- Historic fences survive at Kōke'e and shall be preserved. Replace only those portions that are deteriorated.
- A historic wood fence shall be left unpainted to gently weather.



- A fence shall not exceed four feet in height.
- New fences shall be compatible with the historic setting and be similar in character to those seen historically. Hedges may also be appropriate in some locations.



**DO NOT:**

- Ø Install solid, "stockade" fences that do not allow views into front yards.
- Ø Install chain link, concrete block, unfaced concrete, plastic, fiberglass, plywood, and mesh "construction" fences.

**Residential Parking,  
Garages & Driveways**

Although not a part of the early development of Kokee, the automobile and its associated storage is part of contemporary life. In all cases, the visual impacts of parking, which includes driveways, garages and garage doors, shall be minimized.

**Parking**

- On-site parking shall be informal and subordinate to other uses. Front yards shall not appear to be a parking area.

- Traditionally, front yards were not used as paved parking lots, and instead, yards provided views to facades and open space.
- A parking pad located in the front of a residence is inappropriate.

**DO NOT:**

- Locate a parking pad in the front of a residence.

**Garages**

- Detached garages are preferred.
- Garages shall be set back from the primary building.
- Garages shall be subordinate to the primary structure on the site. The material and detailing of a detached garage shall be utilitarian, to be compatible with other historic accessory structures.
- A garage door shall be designed to minimize the apparent width of the opening. Use materials on the door that are similar to that



of wall surface of the primary structure. Wood-clad garage doors are preferred.

**DO NOT:**

Ø *Install metal or vinyl garage structures or doors.*

**Driveways**

- Paving materials shall minimize the impact a driveway will have on a historic property.
- Consider providing only ribbon strips of paving. This will reduce visual impacts as well as allow more drainage through soils.
- Use materials that are not impervious to water and will not create runoff into the roadway or onto adjacent properties.



**DO NOT:**

Ø *Use concrete, plain asphalt or black top.*

**Accessory Structures**

**Historic Accessory Structures**

Accessory structures are a part of the design traditions of Kōke'e. They include garages, guest quarters, barns and sheds. Because accessory structures help interpret how an entire lot was used historically, their preservation is strongly encouraged.

- Respect the character-defining features of historic accessory structures, such as walls, structural components, roof materials and form, windows, doors and architectural details.

- Historic accessory structures shall be preserved.
- Avoid moving an historic accessory structure from its original location.



- If an existing accessory structure is beyond repair, then replacing it in-kind is encouraged. An exact reconstruction of the accessory structure is not necessary. However, the replacement shall be compatible with the overall character of the historic structure.





**New Accessory Structures**

- A new accessory structure shall be subordinate to the primary structure on a site.
- Locate an accessory structure to the rear of a lot. Locating an accessory structure to the side of a primary structure, but set back substantially, may also be considered.
- Construct an accessory structure that is subordinate in size and character with the primary building. In general, accessory structures shall be unobtrusive and not compete visually with the historic building.
- While the roofline does not have to match the house, it is best that it not vary significantly.
- An accessory structure shall be similar in character to those seen traditionally. Basic rectangular forms, with hip, gable or shed roofs, are appropriate.
- Maintain the traditional range of building materials seen on accessory structures. Appropriate siding materials for secondary buildings include: unpainted or stained wood siding, wood planks, vertical board and batten siding or corrugated metal. These materials should be utilitarian in appearance.
- The use of muted, natural colors and finishes is particularly encouraged.
- Maintain the simple detailing found on accessory structures. Avoid details that may give an outbuilding a residential appearance. Accessory structures shall not mimic primary structures.

**Utilities**

Utilities may include telephone and electrical lines, electrical transformers, ventilation systems, propane tanks, air conditioners and telecommunication systems. Adequate space should be planned in a project from the outset so that their visual impacts are minimized.

- Minimize the visual impacts of utilities and service equipment.
- Locate utilities at the rear of a property and screen them.
- Minimize the visual impacts of exhaust systems by integrating them into the building design.
- Any utility device or piece of service equipment shall have a matte or non-reflective finish and be integrated with the building colors.



- Rooftop appurtenances, such as mechanical equipment, solar devices and satellite dishes, shall be placed in inconspicuous locations.
- Inspect drainfields annually and clean any clogged lines. Test drywells annually with running water from a garden hose to confirm effectiveness.

**REFERENCES**

*Guidelines for the Treatment of Cultural Landscapes.*

*Preservation Brief 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes.*



**RESOURCES FOR HISTORIC FIXTURES  
AND MATERIALS**

An excellent source of suppliers of historically appropriate products and services is available from Traditional Building's web site. Product types include doors and windows, hardware, ornamental metalwork, woodwork and stairs, landscape products, architectural antiques, lighting and electrical, masonry and stonework, roofing and siding, surface finishes and coatings, and others.

Available online at:  
[www.traditional-building.com/8.htm](http://www.traditional-building.com/8.htm)

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Phone: (610)363-7330  
[www.ballandball-us.com](http://www.ballandball-us.com)

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Pasadena, California 91104  
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Fax: (626) 794-2064  
[www.crowncityhardware.com/index.html](http://www.crowncityhardware.com/index.html)

E.R. Butler  
75 Spring Street, Fifth Floor  
New York, NY 10012  
Phone: (212) 925-3565  
[www.erbutler.com](http://www.erbutler.com)

Historic Houseparts, Inc.  
540 South Avenue Rochester, NY 14620

Phone: (585) 325-2329  
Toll Free: (888) 558-2329  
Fax: (585) 325-3613  
[www.historichouseparts.com/](http://www.historichouseparts.com/)

House of Antique Hardware  
122 SE 27th Avenue  
Portland, Oregon 97214  
Phone: (888) 223-2545  
(503) 231-4089  
Fax: (503) 233-1312  
[www.houseofantiquehardware.com/](http://www.houseofantiquehardware.com/)

Restoration Hardware  
104 Challenger Drive  
Portland, TN 37148  
Phone: (800) 762-1005  
[www.restorationhardware.com](http://www.restorationhardware.com)

**Plumbing Fixtures**

A-Ball Plumbing Supplies  
1703 West Burnside Street  
Portland, Oregon 97209  
[www.a-ball.com](http://www.a-ball.com)

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[www.deabath.com](http://www.deabath.com)

Elizabethan Classics  
[www.elizabethanclassics.com/](http://www.elizabethanclassics.com/)

**Lighting**

Classic Illumination, Inc.  
2743 Ninth Street  
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Phone: (510) 849-1842  
[www.classicillumination.com/](http://www.classicillumination.com/)

Conant Custom Brass, Inc.  
266-270 Pine Street  
Burlington, Vermont 05401  
Phone: (800) 832-4482  
[www.conantcustombrass.com](http://www.conantcustombrass.com)

Gibson and Gibson Antique Lighting  
180 Mace Street, #C9  
Chula Vista, CA 91911  
Phone: (619) 422-2447  
[www.gibsonandgibsonantiquelighting.com/](http://www.gibsonandgibsonantiquelighting.com/)

Metropolitan Lighting Fixture Co., Inc.  
315 East 62nd Street  
New York, NY 10021  
Phone: (212) 838-2425  
Fax (803)599-6000

Rejuvenation Lamp & Fixture Company  
2550 NW Nicolai  
Portland, Oregon 97210  
Phone: (888) 401-1900  
[www.rejuvenation.com](http://www.rejuvenation.com)

This web site has a "fixture wizard", which offers suggestions for lighting fixtures by using selection criteria you input including age, architecture style, room type, etc.

**Repair Materials**

Abatron, Inc.  
5501 - 95th Avenue, Kenosha, WI 53144  
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E3B 4Y9 Canada  
Phone: (506) 366 - 3529  
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Fax: (506) 366 – 3577  
<http://www.eco-house.com/>

Inorganic Mineral Paints (Silicate  
Dispersion Paints), Natural Wood Finishes.

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<http://www.cr.nps.gov/hps/tps/standguide/index.htm>

**Professional Societies and Associations**

Association for Preservation Technology (APT)  
1224 Centre West, Suite 400B  
Springfield, IL 62704  
Phone: (217) 793-7874  
Fax: (888) 723-4242  
<http://www.apti.org/publications/index.cfm>



Historic Hawai'i Foundation  
680 Iwilei Road, Suite #690  
Honolulu, HI 96817  
Phone: (808) 523-2900  
Fax: (808) 523-0800  
<http://www.historichawaii.org/>

Kauai Historical Society  
P.O. Box 1778  
Lihue, HI 96766  
Phone: (808) 245-3373  
Fax: (808) 245-8693  
<http://www.kauaihistoricalsociety.org/>

National Center for Preservation Technology and Training (NCPTT)  
645 University Parkway  
Natchitoches, LA 71457  
Phone: (318) 356-7444  
Fax: (318) 356-9119  
[www.ncptt.nps.gov/](http://www.ncptt.nps.gov/)

National Park Service  
U.S. Department of the Interior  
Heritage Preservation Services  
1849 C Street, NW (2255)  
Washington, DC 20240  
Phone: (202) 513-7270  
[http://www.cr.nps.gov/hps/hps\\_contact.htm](http://www.cr.nps.gov/hps/hps_contact.htm)

National Park Service  
U.S. Department of the Interior  
Technical Preservation Services  
1849 C Street, NW (2255)  
Washington, DC 20240  
Telephone: (202) 513-7270  
<http://www.cr.nps.gov/hps/tps/index.htm>

National Preservation Institute  
P.O. Box 1702  
Alexandria, Virginia 22313  
Phone: (703) 765-0100  
<http://www.npi.org/>

National Trust for Historic Preservation  
Western Office  
8 California Street, Suite 400  
San Francisco, CA 94111-4828  
Phone: (415) 956-0610  
Fax: (415) 956-0837

State of Hawai'i  
Department of Land and Natural Resources  
Division of State Parks  
P.O. Box 621  
Honolulu, HI 96809  
Phone: (808) 587-0300  
<http://www.hawaii.gov/dlnr/dsp/>

U.S. National Committee of the  
International Council on Monuments and Sites (US/ICOMOS)  
401 F Street, NW, Suite 331  
Washington, DC 20001  
Phone: (202) 842-1866  
Fax 202-842-1861  
<http://www.icomos.org/usicomos/>

#### National Park Service Publications

***Applicable Historic Building Preservation Briefs***, available online  
at <http://www.cr.nps.gov/hps/tps/briefs/presbhom.htm>.

01: Assessing Cleaning and Water-Repellent Treatments  
for Historic Masonry Buildings

02: Repointing Mortar Joints in Historic Masonry Buildings

- 03: Conserving Energy in Historic Buildings
- 04: Roofing for Historic Buildings
- 06: Dangers of Abrasive Cleaning to Historic Buildings
- 09: The Repair of Historic Wooden Windows
- 10: Exterior Paint Problems on Historic Woodwork
- 14: New Exterior Additions to Historic Buildings: Preservation Concerns
- 15: Preservation of Historic Concrete: Problems and General Approaches
- 16: The Use of Substitute Materials on Historic Building Exteriors
- 17: Architectural Character - Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character
- 18: Rehabilitating Interiors in Historic Buildings - Identifying Character-Defining Elements
- 19: The Repair and Replacement of Historic Wooden Shingle Roofs
- 22: The Preservation and Repair of Historic Stucco
- 24: Heating, Ventilating, and Cooling Historic Buildings: Problems and Recommended Approaches
- 28: Painting Historic Interiors
- 32: Making Historic Properties Accessible
- 35: Understanding Old Buildings: The Process of Architectural Investigation
- 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes
- 37: Appropriate Methods of Reducing Lead-Paint Hazards in Historic Housing
- 38: Removing Graffiti from Historic Masonry
- 39: Holding the Line: Controlling Unwanted Moisture in Historic Buildings

- 43: The Preparation and Use of Historic Structure Reports

***Selected Preservation Tech Notes***, available online at <http://www.cr.nps.gov/hps/tps/technotes/tnhome.htm>.

#### **Doors**

- No. 1: Historic Garage and Carriage Doors: Rehabilitation Solutions. Bonnie Halda, AIA. (1989)

#### **Exterior Woodwork**

- No. 1: Proper Painting and Surface Preparation. Sharon Park, AIA. (1986)
- No. 2: Paint Removal from Wood Siding. Alan O'Bright. (1986)
- No. 4: Protecting Woodwork Against Decay Using Borate Preservatives. Ron Sheetz and Charles Fisher. (1993)

#### **Masonry**

- No. 4: Non-destructive Evaluation Techniques for Masonry Construction. Marilyn E. Kaplan, Marie Ennis and Edmund P. Meade. (1997)

#### **Site**

- No. 1: Restoring Vine Coverage to Historic Buildings. Karen Day. (1991)

#### **Temporary Protection**

- No. 2: Specifying Temporary Protection of Historic Interiors During Construction and Repair. Dale H. Frens. (1993)
- No. 3: Protecting A Historic Structure during Adjacent Construction. Chad Randl. (2001)

**Windows**

- No. 1-9 Available in The Window Handbook: Successful Strategies for Rehabilitating Windows in Historic Buildings.
- Windows No. 1: "Planning Approaches to Window Preservation," by Charles Fisher. (1984)
- Windows No. 4: "Replacement Wooden Frames and Sash," by William Feist. (1984)
- Windows No. 7: "Window Awnings," by Laura Muckenfuss and Charles Fisher. (1984)
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- Windows No. 16: "Repairing and Upgrading Multi-Light Wooden Mill Windows," by Christopher Closs. (1986)



## GLOSSARY

***Preservation Terminology***

Preservation projects may include the maintenance of existing historic elements, repairs to deteriorated features, the replacement of missing details, and construction of new additions.

**Character defining feature.** A prominent or distinctive aspect, quality, or characteristic of a property that contributes significantly to its physical character. Land-use patterns, vegetation, furnishings, decorative details and materials may be such features.

**Cultural Landscape.** A geographic area (including both cultural and natural resources and the wildlife or domestic animals therein), associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. There are four general types of cultural landscapes, not mutually exclusive: historic sites, historic designed landscapes, historic vernacular landscapes, and ethnographic landscapes.

**Demolition.** To tear down or destroy a building or a building element. In a total demolition, the entire structure is removed from the site, including original materials. In other cases, a partial demolition may occur. A rear wall may be removed, for example, to construct an addition. If a partial demolition is extensive, it can result in such a substantial loss of integrity that the building may no longer retain historic significance.

**Feature.** The smallest element(s) of a property or landscape that contributes to the significance and that can be the subject of a treatment intervention. Examples include a woodlot, hedge, lawn, specimen plant, alley, house, meadow or open field, fence, wall, earthwork, pond or pool, bollard, orchard, or agricultural terrace.

**Historic character.** The sum of all-visual aspects, features, materials, and spaces associated with a property or landscape's

history, i.e. the original configuration together with losses and later changes. These qualities are often referred to as character defining.

**Historic property** means any building, structure, object, district, area, or site, including *heiau* and underwater site, which is over fifty years old.

**Historic site.** A property significant for its association with a historic event, activity or person. Cabins, outbuildings, and lots associated with Kōke'e's recreational activities may be considered examples of historic sites.

**Historic vernacular landscape.** A landscape that evolved through use by the people whose activities or occupancy shaped it. Through social or cultural attitudes of an individual, a family, or a community, the landscape reflects the physical, biological, and cultural character of everyday lives. Function plays a significant role in vernacular landscapes. This may be a district of historic recreation residences built amongst Kōke'e's valleys and ridges. Examples include rural historic districts such as Kōke'e.

**Integrity.** The authenticity of a property's historic identity, evinced by the survival of physical characteristics that existed during the property's historic or prehistoric period. The seven qualities of integrity as defined by the National Register of Historic Places are location, setting, feeling, association, design, workmanship, and materials.

**Maintenance.** Work that focuses on keeping the property in good working condition by repairing features as soon as deterioration becomes apparent, and by using procedures that retain a feature's original character and finish. In some cases, preventive maintenance is executed prior to noticeable deterioration. No alteration or reconstruction is involved. Such work is considered maintenance.

**Preservation.** The act or process of applying measures to sustain the existing form, integrity and material of a building or structure, as well as the existing form and vegetative cover of a site is defined as

preservation. It may include initial stabilization work, where necessary, as well as ongoing maintenance of historic building materials. Essentially, the property is kept in good, original condition.

**Reconstruction.** To recreate a replica of an original feature of a building using new materials. This technique is often used to replace ornamentation that may have been removed or destroyed. When applied selectively in an overall rehabilitation project, reconstruction of missing elements can enhance the historic appearance. (In some rare cases, an entire building is reconstructed to match the original appearance. Such a structure would be compatible with its historic context, but would not be rated as having historic significance.)

**Rehabilitation.** Rehabilitation is the process of returning a property to a state that makes a contemporary use possible, while still preserving those portions or features of the property that are significant to its historical, architectural and cultural values. Rehabilitation may include the adaptive use of the building, and additions may be constructed.

**Remodeling.** To remake or to make over the design image of a building is to remodel it. The appearance is changed by removing original details and by adding new features that are out of character with the original. Remodeling is inappropriate for historic buildings.

**Renovation.** To renovate means to improve by repair, to revive. In renovation, the usefulness and appearance of the building is enhanced. The basic character and significant details are respected and preserved, but some sympathetic alterations may also occur. Alterations should be reversible, such that future owners may restore the building to its original design, should they wish to do so.

**Restoration.** To restore, one reproduces the appearance of a building exactly as it looked at a particular moment in time. This process may include the removal of non-original(?) work or the replacement of missing historic features.

**Significance.** The meaning or value ascribed to a cultural landscape based on the National Register criteria for evaluation. It normally stems from a combination of association and integrity.

**Treatment.** Work carried out to achieve a particular historic preservation goal.

### *Architectural Terminology*

**Balustrade.** A railing or parapet supported by a row of short pillars or balusters.

**Bargeboard.** The decorative board along the roof edge of a gable concealing the rafters.

**Bay.** A part of a structure defined by vertical divisions such as adjacent columns or piers.

**Bracket.** A wooden or stone decorative support beneath a projecting floor, window, or cornice.

**Column.** A vertical support, usually supporting a member above.

**Dormer.** A small window with its own roof projecting from a sloping roof.

**Downspout.** A pipe for directing rain water from the roof to the ground.

**Façade.** The front face or elevation of a building.

**Fenestration.** The arrangement of the openings of a building.

**Flashing.** Pieces of metal used for waterproofing roof or wall joints.

**Gable.** The triangular portion of the end of a wall under a pitched roof.

**Gable roof.** A pitched roof form where two flat roof surfaces joint at a straight ridge, forming gables at both ends.

**Hipped roof.** A roof with slopes on all four, instead of two, sides.

**Light (or lite).** A section of a window, the glass or pane.

**Lintel.** A horizontal beam over an opening carrying the weight of the wall.

**Muntin.** A glazing bar that separates panes of glass.

**Pier.** An upright structure of masonry serving as a principal support.

**Pitch.** The degree of slope of a roof.

**Sash.** The movable part of a window holding the glass.

**Side lights (or lites).** Narrow windows flanking a door.

**Sill.** The horizontal water-shedding member at the bottom of a door or window.

**Six-over-six double-hung sash.** A type of window with six lites (or windowpanes) each in an upper and a lower sash that move up and down in vertical grooves one in front of the other.

**Transom.** A window opening over a door or window, usually for ventilation.

**Two-Over-Two Double-Hung Sash.** A type of window with two lites each in an upper and a lower sash that move up and down in vertical grooves one in front of the other. The lites are created by one vertical glazing bar in the center of the sash.

### ***Other Terms***

**Accessory Use.** A land use that is conducted on the same or adjoining property as the principal permitted or nonconforming land use, whether within the same building, or within an accessory structure, or as an accessory use of the land area; and is clearly incidental to and customarily found in connection with the existing land use.

**Abandonment.** The failure to apply to re-build a structure within one year of its destruction.

**Board.** The Board of Land and Natural Resources.

**Board permit.** A permit approved by the Board of Land and Natural Resources.

**Cabin.** A lodging unit not more than 800 square feet under roof, intended for occasional use in managing large and/or remote land areas; having access by existing foot trail or jeep trail, and no paved access; and having no electrical or water utility service. Such cabins shall not be used for rental purposes.

**Chairperson.** The Chairperson of the Board of Land and Natural Resources.

**Clearing.** The removal of standing vegetation, with no ground disturbance.

**Conservation district.** Those lands within the various counties of the State and state marine waters bounded by the conservation district line, as established under provisions of Act 187, Session Laws of Hawaii, 1961, and Act 205, Session Laws of Hawaii 1963, or future amendments thereto.

**Department.** The Department of Land and Natural Resources.

**Division.** The State of Hawai'i Division of State Parks.



**Dwelling Unit.** A room or rooms connected together, constituting an independent housekeeping unit and containing a single kitchen. Two or more essentially separate structures do not constitute a single dwelling unit. A single dwelling unit cannot be constituted by a token connection between separate structures, such as a trellis or covered walkway.

**Emergency.** An imminently dangerous situation, which poses a substantial threat to public health, safety and welfare as declared by the chairperson of the department or designee.

**Forest reserves.** Those lands set aside as forest reserves by the Department pursuant to section 183-11, HRS.

**Grading.** The excavation of earth material, fill or combination thereof.

**Grubbing.** The removal of vegetation by scraping, dislodging or uprooting vegetation, which breaks the topsoil.

**Land.** All real property, fast or submerged, and all interests therein, including fauna, flora, minerals and all such natural resources, unless otherwise expressly provided.

**Land use:**

- (1) The placement or erection of any solid material on land if that material remains on the land more than fourteen days, or which causes a permanent change in the land area on which it occurs;
- (2) The grading, removing, harvesting, dredging, mining or extraction of any material or natural resource on land;
- (3) The subdivision of land; or
- (4) The construction, reconstruction, demolition, or alteration of any structure, building, or facility on land.

For purposes of this chapter, “harvesting” and “removing” does not include the taking of aquatic life or wildlife that is regulated by state fishing and hunting laws nor the gathering of natural

resources for personal, noncommercial use or pursuant to Article 12, Section 7 of the Hawaii State Constitution or section 7-1, HRS relating to certain traditional and customary Hawaiian practices.

**Management plan.** A comprehensive plan for carrying out multiple land uses.

**Minor.** Any use that results in negligible change to or impact to land, a natural resource, or a structure or facility.

**Natural area reserve.** Those state lands that have been designated as part of the Hawaii natural area reserve system by the Department pursuant to section 195-4, HRS.

**Natural resource.** Resources such as plants, aquatic life and wildlife, cultural, historic, recreational and archeological sites, scenic areas, ecologically significant areas, and minerals.

**Nonconforming use.** The lawful use of any building, premises or land for any trade, industry, residence or other purposes which is the same as and no greater than that established immediately prior to October 1, 1964, or prior to the inclusion of the building, premises, or land within the conservation district.

**Noxious plant.** Those plants as defined in HRS Chapter 152 and Chapter 4-68, subtitle 6, HAR as well as other invasive species as may be defined by the Department.

**Plant sanctuary.** An area of land set aside to preserve, protect, conserve, and manage particular plant species.

**Recreation-residence.** A lodging unit consisting of one or more buildings or structures located on state park, forest reserve, or other public lands leased for recreation-residence use. The lodging unit can not be used as a principle residence for a single family or used for rental purposes.

**Presiding officer.** A person or persons designated or appointed by the board or chairperson to conduct public hearings or proceedings on behalf of the board.

**Public purpose us.** A land uses undertaken in support of a public service by an agency of the county, state or federal government, or by an independent non-governmental entity. Examples of public purpose uses include, but are not limited to public roads, marinas, harbors, airports, public water works and other utilities, communication systems, flood or erosion control projects, recreational facilities, community centers that benefit the public, etc.

**Repair, maintenance, operation.** Land uses and activities necessary and incidental for the continued conduct of a use, whether nonconforming or permitted, including repairs not exceeding 50 percent of the replacement value of the structure or use.

**Scenic area.** Areas possessing natural, scenic, or wildland qualities.

**Significantly different.** The alteration of an existing structure, facility, or use that increases the size or height of an existing structure, facility, or use by more than fifty (50) percent.

**Shelter** a structure with no more than three walls, used for sheltering from the elements.

**Site plan.** A plan drawn to scale, showing the actual dimensions and shape of the property, the size and locations on the property of existing and proposed structures and open areas including vegetation and landscaping.

**Subzone.** A zone established within the conservation district which is identified by boundaries and resource characteristics.

**Temporary variance.** An exception to zoned use, where good cause is shown and where the proposed variance is for a use determined to be in accordance with good conservation practices.

**Topographical features.** Natural and artificial geographical features that appear on a topographical map, such as mountains, hills, valleys, streams, wetlands, shorelines, roads, and other such structures.